Final

Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
740 Stevens Center, Room 1200, Richland, Washington
May 26, 1993

FROM/APPROVAL: Eric Goller Date 6/23/93
Eric D. Goller, 100 Area Unit Manager, RL (A5-19)

APPROVAL: [signature] Date 6/23/93
Jack W. Donnelly, 100 Aggregate Area Unit Manager, WA Department of Ecology

APPROVAL: [signature] Date 6-23-93
Dennis Faulk, 100 Aggregate Area Unit Manager, EPA (B5-01)

Meeting Minutes are attached. Minutes are comprised of the following:

Attachment #1	-	Meeting Summary
Attachment #2	-	Attendance Sheet
Attachment #3	-	Agenda
Attachment #4	-	Action Item Status List
Attachment #5	-	100 Area Operable Units Summary May 1993
Attachment #6	-	DSI Transmitting Waste Control Plan for the 100-BC-2 Field Investigations
Attachment #7	-	DSI Transmitting Description of Work for the 100-BC-2 Vadose Investigation
Attachment #8	-	Waste Control Plan Rev 1, 100-KR-1
Attachment #9	-	Status of M-30-05 Activities
Attachment #10	-	100-HR-3 Groundwater Treatability Tests
Attachment #11	-	116-C-2C Pluto Crib Sand Filter 100-BC-2 Operable Unit
Attachment #12	-	Justification for Not Performing Limited Field Sampling at the 116-C-2C Pluto Crib Sand Filter

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Prepared by: Kay Kimmel Date: 6/23/93
Suzanne Clarke, Kay Kimmel, GSSC (A4-35)

Concurrence by: Alan D. Krug Date: 6/23/93
Bob Henckel, WHC Coordinator (H6-02)
A.D. Krug

Attachment #1
Meeting and Summary of Commitments and Agreements

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993

1. **SIGNING OF THE APRIL 100 AREA UNIT MANAGER'S MEETING MINUTES** - Minutes were reviewed and approved with no changes.

2. **ACTION ITEM UPDATE: (See Attachment 4 for complete status, items listed below indicate the update to Action Items made during the meeting):**

   1AAMS.9 No additional information.

   1AAMS.15 No additional information.

   1AAMS.16 No additional information.

3. **NEW ACTION ITEMS:** No new action items were initiated this month.

4. **INFORMAL TRANSMITTALS:** The following documents were informally transmitted to the Regulators:

   - Validated data (see attachment #5 for the transmittal letters).
   - *Waste Control Plan for the 100-BC-2 Field Investigations* was informally transmitted to the Regulators (see attachment #6). Comments are requested by June 9, 1993, if possible. The comments require resolution by the end of June in order to prevent impact on schedules.
   - *Description of Work for the 100-BC-2 Vadose Investigation* was informally transmitted to the Regulators (see attachment #7).
   - Waste Control Plan (Rev. 1) for 100-KR-1 is provided as attachment #8.

5. **100 AREA ACTIVITIES:**

   - Milestone 30-05 - Robert E. Peterson presented an update of activities being performed to fulfill the M-30-05 Milestone (see attachment #9). A report entitled *Equipment Installations and Monitoring Activities to Satisfy TPA Milestone M-30-05* and a draft agreement form concerning the scope of the milestone were informally transmitted to the Regulators. A meeting to discuss the scope of the milestone is planned for June 13, 1993.
   - Treatability Study Status: There will be an open house for the 100-Area Treatability Test equipment at 1:00 p.m. tomorrow, May 27 near FFTF.
   - 100-HR-3 Treatability Study: Jim Duncan presented the results of the bench studies for the soil

washing treatability study, see attachment #10.

- 100-HR-1 Excavation Treatability Study: Joan Woolard led a discussion concerning the content of an article for the TPA Focus flier planned for distribution to the general public. The article is anticipated for distribution on June 7, 1993.

- Reduction of Analyte List: Jim Yokel led a discussion concerning analyte lists for future 100-Area groundwater monitoring. At the April 100-Area Unit Managers meeting the Regulators were provided with a list of analytes that were eliminated from the analyte list during the previous groundwater sampling round. It was proposed that these analytes continue to be eliminated from future sampling rounds upon Regulator concurrence. The Regulators concurred that hydrazine analyses be eliminated from future groundwater monitoring activities; however, tritium and gross alpha and gross beta should be retained on analyte lists.

- Limited Field Sampling for the 116-C-2C Pluto Crib: Kevin Kytola presented a proposal and justification for not performing the limited field sampling in the subject crib (see attachments #11 and #12).

- Attachment #5 was provided for general information on the 100 Areas Operable Units.

- D & D - Mike Hughes described past, current, and future Decontamination and Demolition projects in the 100-Areas. He indicated that over 200 facilities had already been decommissioned and there were over 100 surplus facilities waiting on D&D. Five buildings have gone through D&D, this year-to-date, with three more scheduled.

- Scoping meeting for the 100-DR-2 work plan is scheduled for 9:30 a.m. June 1, 1993.

100 Aggregate Area Unit Manager's Meeting
Official Attendance Record
May 26, 1993

Please print clearly and use black ink

PRINTED NAME	ORGANIZATION	O.U. ROLE	TELEPHONE
Eric Goller	DOE-RL	Past Practice 100 Area Unit Mgr	(509) 376-7326
Bob Schreck	GSSC-Dames & Moore		(509) 946-0176
N.M. Naikinimbalkar	WHC	DR/KR Coordinator	(509) 376-8739
Dirk Dunning	OR DOE	OR HPC	(503) 378-3187
Tom Jones	PNL	Program office	375-2710
Steve Weiss	WHC	100 Aggregate Area	376-1683
RP Henckel	WHC	100 Area	(509) 376-2091
Bob Peterson	WHC	100 Area Groundwtr	(509) 376-5858
Kevin Kytola	WHC	100-BC-1 100-BC-2	509-372-1662
Jim Duncan	WHC	100-NR-3 Groundwtr	(509) 372-0896
Pamela Innis	EPA	Unit Manager	509/376-4919
Larry Gadbois	EPA	"	" " 9884
Dennis Faulk	EPA	"	6-8631
Robert Beaver	EPA	"	6-8665
J Wesley	Ecology	UM	736-3012
Gary Friedman	Ecology	UM	736-3026
A. D. Krug	WHC	100-NR-1 100 Area Sources	376-5634
R.L. Biggerstaff	WHC	100 Areas GW	3765634
A. L. Langstaff	WHC	100 BC	376-6056
Joseph Mollusky	PRC	EPA Support	206 624-2692
Chuck Cline	Ecology	Hydrogeo. Support	206 438-7556
Jerry Yokel	Ecology	Tech. Support for Dib Goswami	736-3009
Ward Staubitz	USGS	EPA Support	206 593-6510
Kay Kinnec	MACTEC	RL Support	509-376-1985
Suzanne E. Clarke	Dames & Moore	GSSC to RL	509-376-8189

Attachment #3
Agenda

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993

100 Area General Discussions

- **D & D** - Mike Hughes
- **M-30-05** - Robert E. Peterson
- **Treatability Studies**
  - **100-HR-1 Excavation Treatability Study** - Jil Frain
  - **Soil Washing Treatability Study** - Jim Field
  - **100-HR-3 Treatability Study** - Jim Duncan

Operable Unit Status - Questions - Naiknimbalkar/Ayres/Krug/Steve Vukelich/Jim Roberts/Kytola

Action Item Status

Attachment #4

Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993

Action Item Status List

ITEM NO.	ACTION	STATUS
1AAMS.9	DOE shall send a letter to Ecology, suggested from S. H. Wisness to D. Jansen with a cc. to EPA, explaining what is included in the ER Program for the N Reactor Area and how the multiple programs will be handled organizationally. Action to J. D. Goodenough (2/27/92). Action: E. D. Goller (5/27/92).	Open. Related to the N Areas Issues Papers. No answer 7/29/92. No additional information (8/26/92). On General Topics Agenda for October (9/23/92). No new information (5/26/93).
1AAMS.15	Provide response to April 2 EPA letter concerning river seeps. Action: Eric Goller (RL) 7/29/92.	Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (5/26/93).
1AAMS.16	DOE should transmit Revision 1 of M-30-01.	Open (7/29/92). In DOE for transmittal (8/26/92). No additional information (5/26/93).

100-BC-1 SOURCE OPERABLE UNIT WORK SUMMARY

May 26, 1993

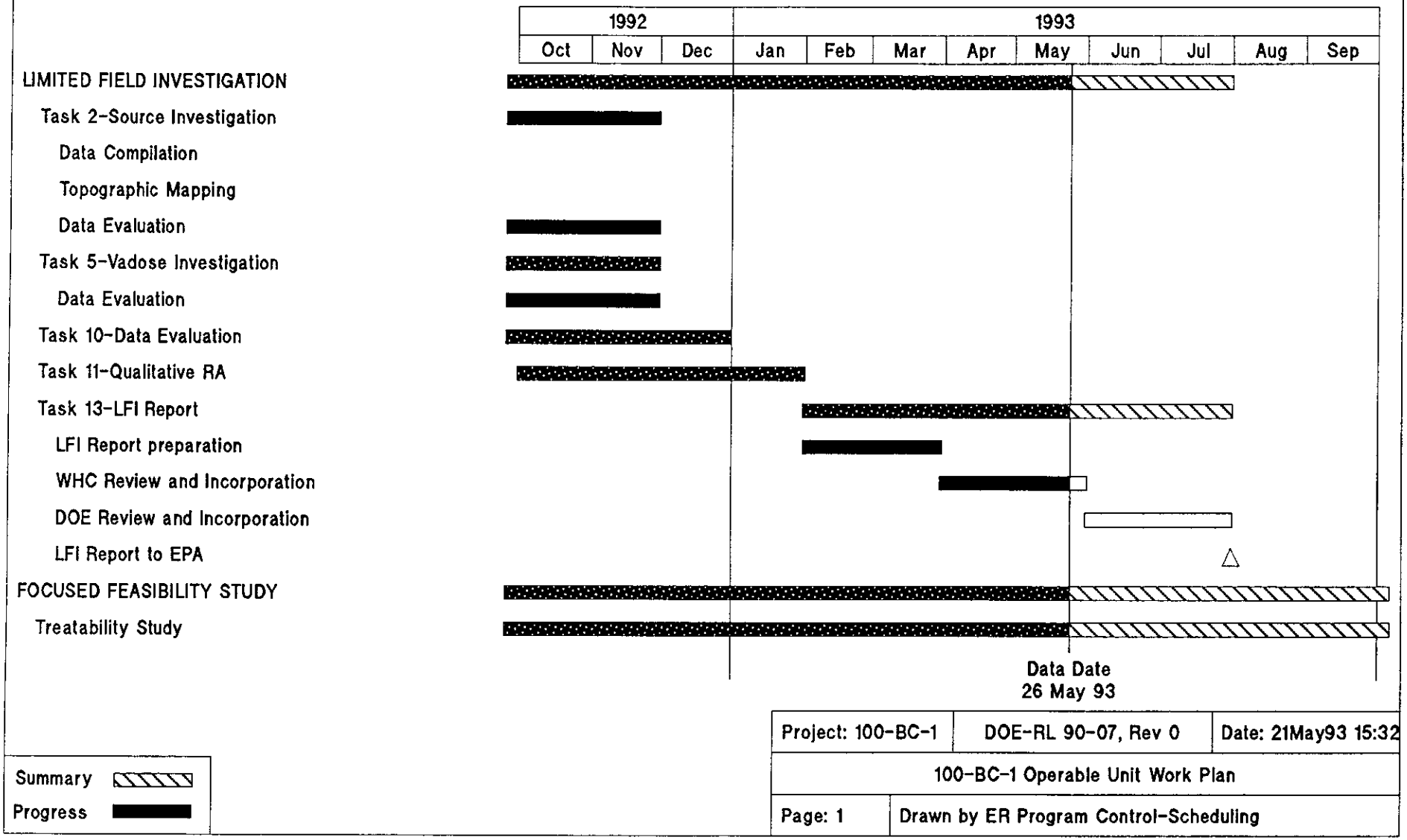
Task 11 - Qualitative Risk Assessment:

DOE/RL-HQ comments are currently being incorporated into the QRA and LFI.

Task 13 - Limited Field Investigation (LFI) Report:

The report has gone through internal WHC review and comments are being incorporated. Submittal of the document for DOE/RL review is anticipated to be at the end of May 1993.

100-BC-1 OPERABLE UNIT



100-BC-2 SOURCE OPERABLE UNIT WORK SUMMARY

May 26, 1993

RI/FS Work Plan:

DOE/RL - HQ comments have been incorporated and the document is due to EPA and Ecology on May 21, 1993 for review. This work plan addresses all of the remaining source operable unit waste sites in the 100-B/C Area.

100-BC-5 STATUS

- 1ST QUARTER (JULY), 2ND QUARTER (OCTOBER), 3RD QUARTER (JANUARY), 4TH QUARTER (APRIL) GROUNDWATER SAMPLING COMPLETE. SAMPLING WILL BE ON A SEMI-ANNUAL BASIS STARTING IN OCTOBER 1993.

- SAMPLE VALIDATION REPORTS FOR DRILLING SAMPLE DATA AND 1ST QUARTER GW SUBMITTED DECEMBER 31, 1992

- SAMPLE VALIDATION REPORT FOR 2ND QUARTER GW SUBMITTED APRIL 14, 1993

- LFI REPORT ACTIVITIES IN PROGRESS

100-KR-4 STATUS

- 1ST QUARTER (SEPTEMBER), 2ND QUARTER (DECEMBER), 3RD QUARTER (MARCH) GROUNDWATER SAMPLING COMPLETE

- SAMPLE VALIDATION REPORTS FOR DRILLING SAMPLE DATA AND 1ST QUARTER GW SUBMITTED MARCH 12, 1993

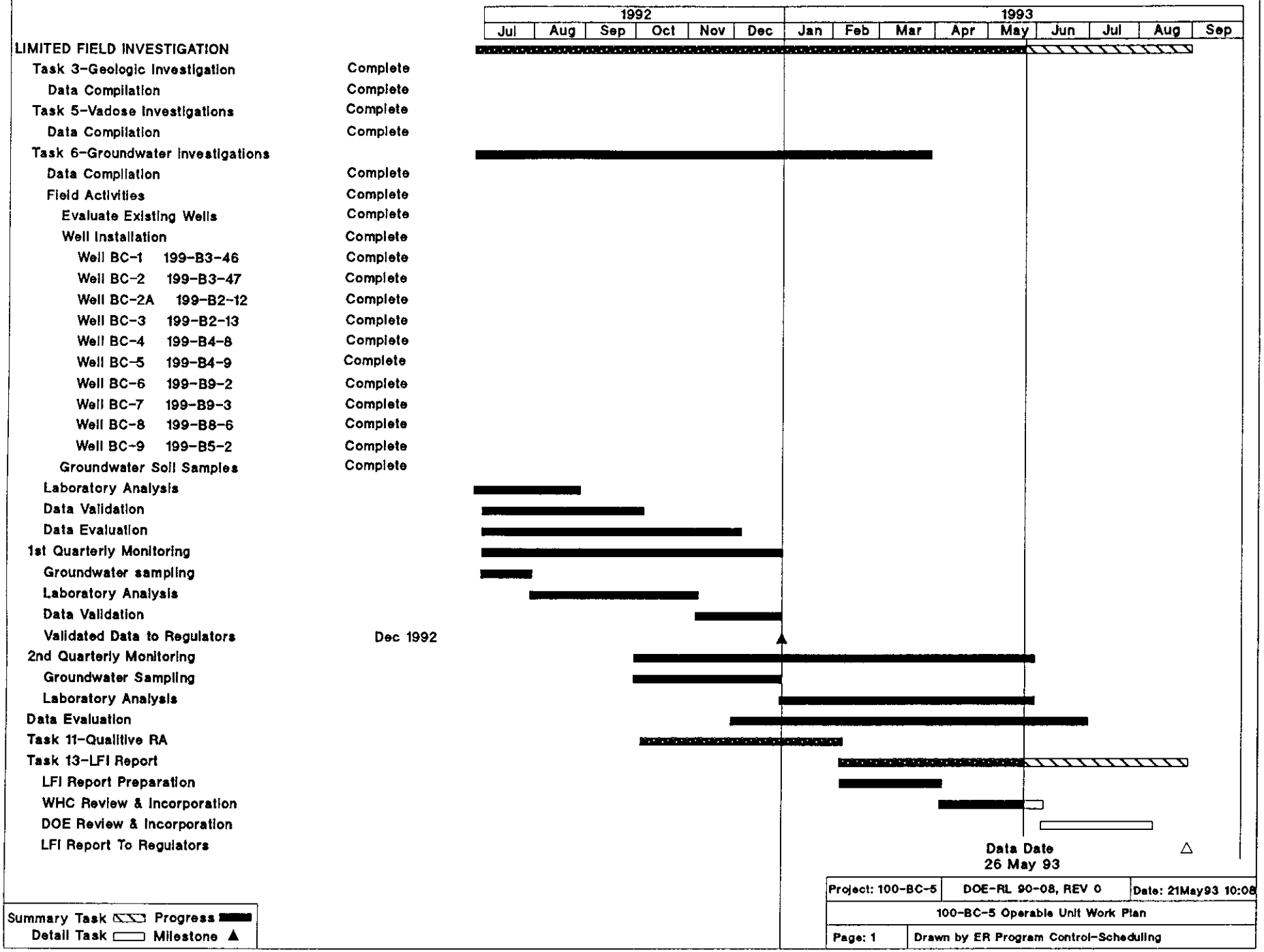
100-FR-3 STATUS

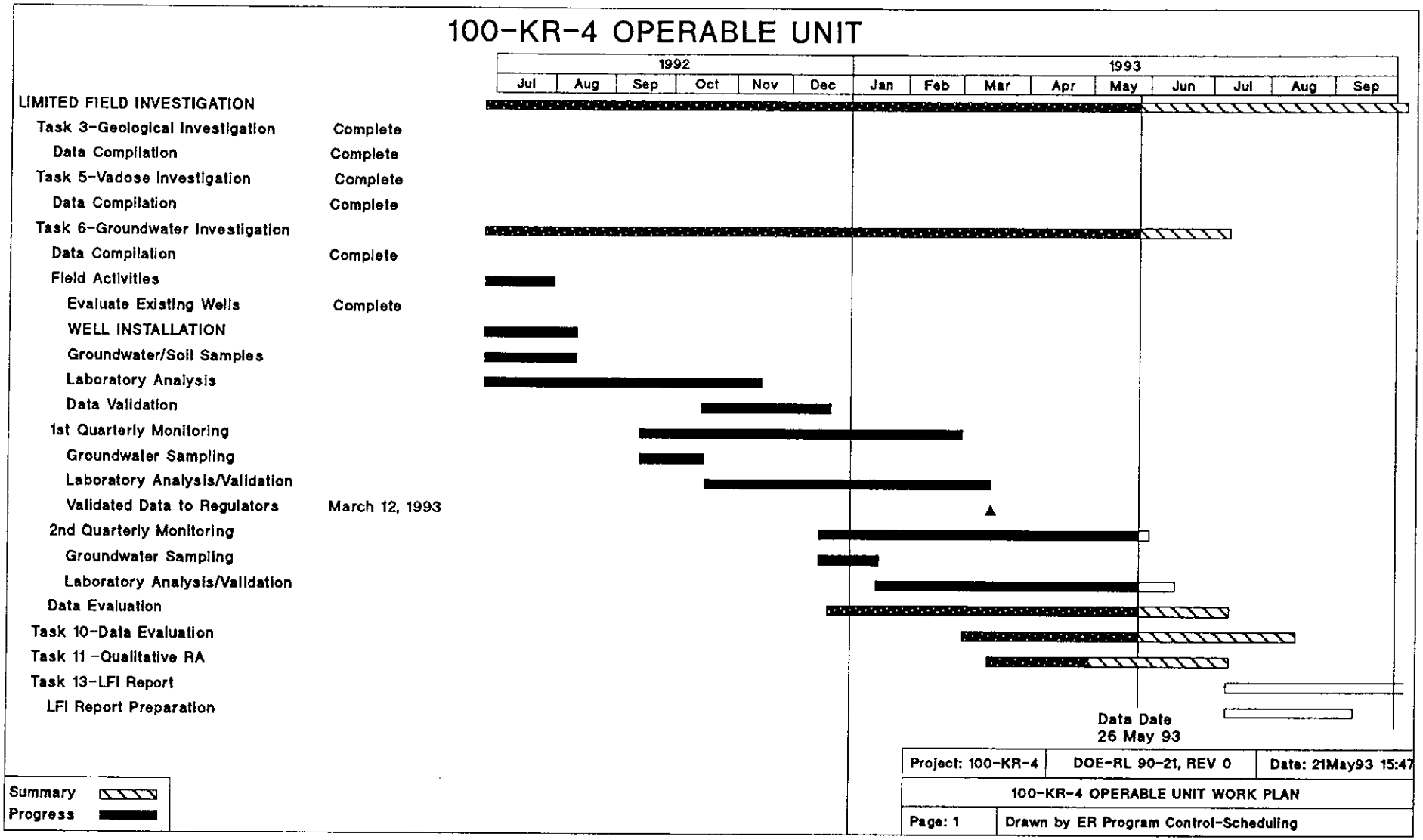
- ALL FY92 DRILLING ACTIVITIES COMPLETE (DECEMBER)

- 1ST QUARTER (DECEMBER), 2ND QUARTER (APRIL) GROUNDWATER SAMPLING COMPLETE

- SAMPLE VALIDATION REPORT FOR DRILLING SAMPLE DATA SUBMITTED MARCH 12, 1993

100-BC-5 OPERABLE UNIT




100-KR-4 OPERABLE UNIT
1992
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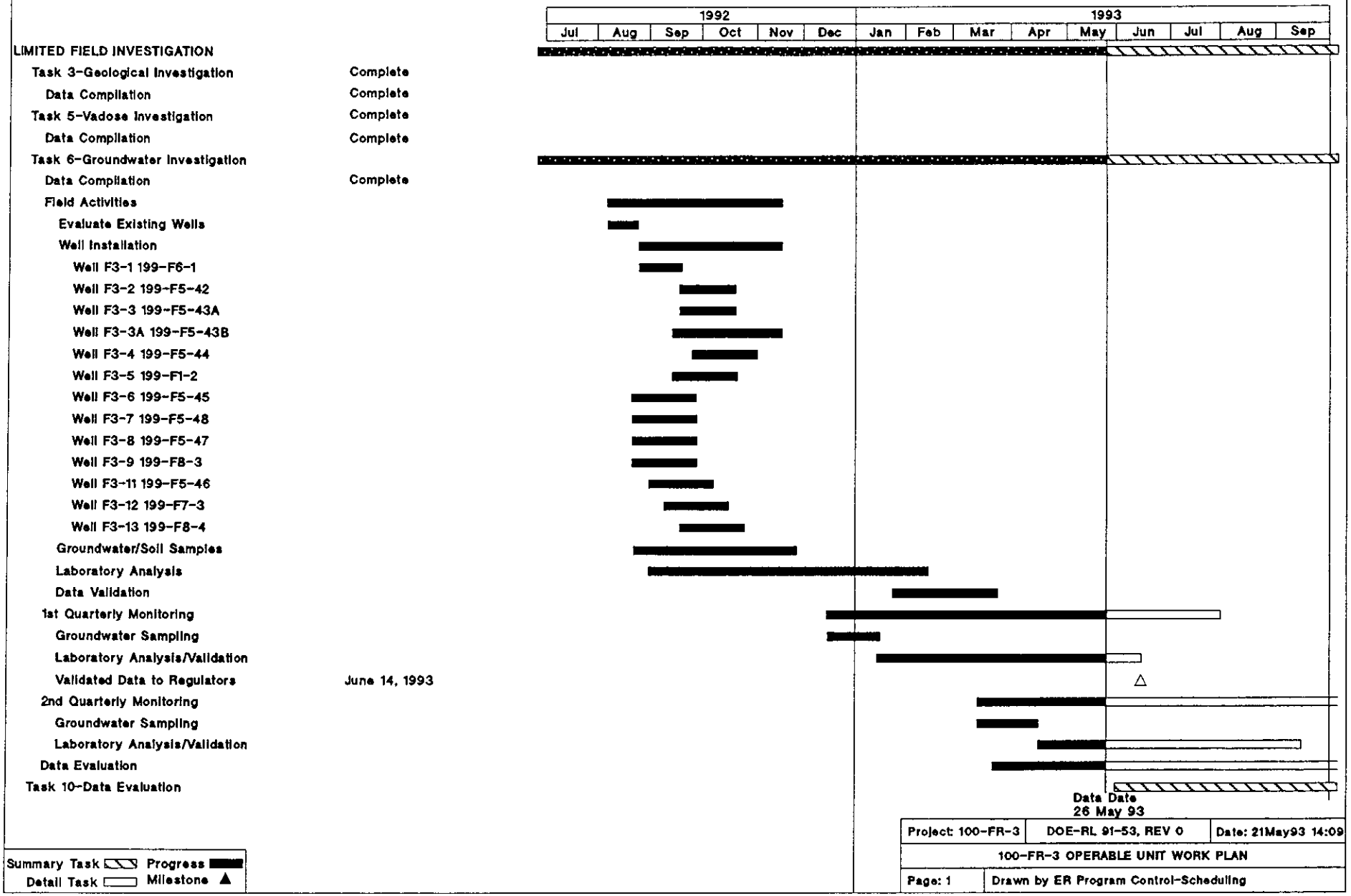
Sep
LIMITED FIELD INVESTIGATION
Task 3-Geological Investigation
Complete
Data Compilation
Complete
Task 5-Vadose Investigation
Complete
Data Compilation
Complete
Task 6-Groundwater Investigation
Data Compilation
Complete
Field Activities
Evaluate Existing Wells
Complete
WELL INSTALLATION
Groundwater/Soil Samples
Laboratory Analysis
Data Validation
1st Quarterly Monitoring
Groundwater Sampling
Laboratory Analysis/Validation
Validated Data to Regulators
March 12, 1993
2nd Quarterly Monitoring
Groundwater Sampling
Laboratory Analysis/Validation
Data Evaluation
Task 10-Data Evaluation
Task 11 -Qualitative RA
Task 13-LFI Report
LFI Report Preparation
Data Date
26 May 93
Summary
Progress
Project: 100-KR-4
DOE-RL 90-21, REV 0
Date: 21May93 15:47
100-KR-4 OPERABLE UNIT WORK PLAN
Page: 1
Drawn by ER Program Control-Scheduling

100-FR-3 OPERABLE UNIT



FY 1993 Activities for 100-DR-1
N.M. Naiknimbalkar

May 1993 Status Report

100-DR-1 DATA VALIDATION STATUS

Nonintrusive Data Validation:

The data validation reports for Electrical Facilities, and 108-D Office Building was submitted to DOE-RL/Regulators.

100-DR-1 QUALITATIVE RISK ASSESSMENT STATUS

Qualitative Risk Assessment
Document Preparation:

SAIC/Golder has prepared this report.

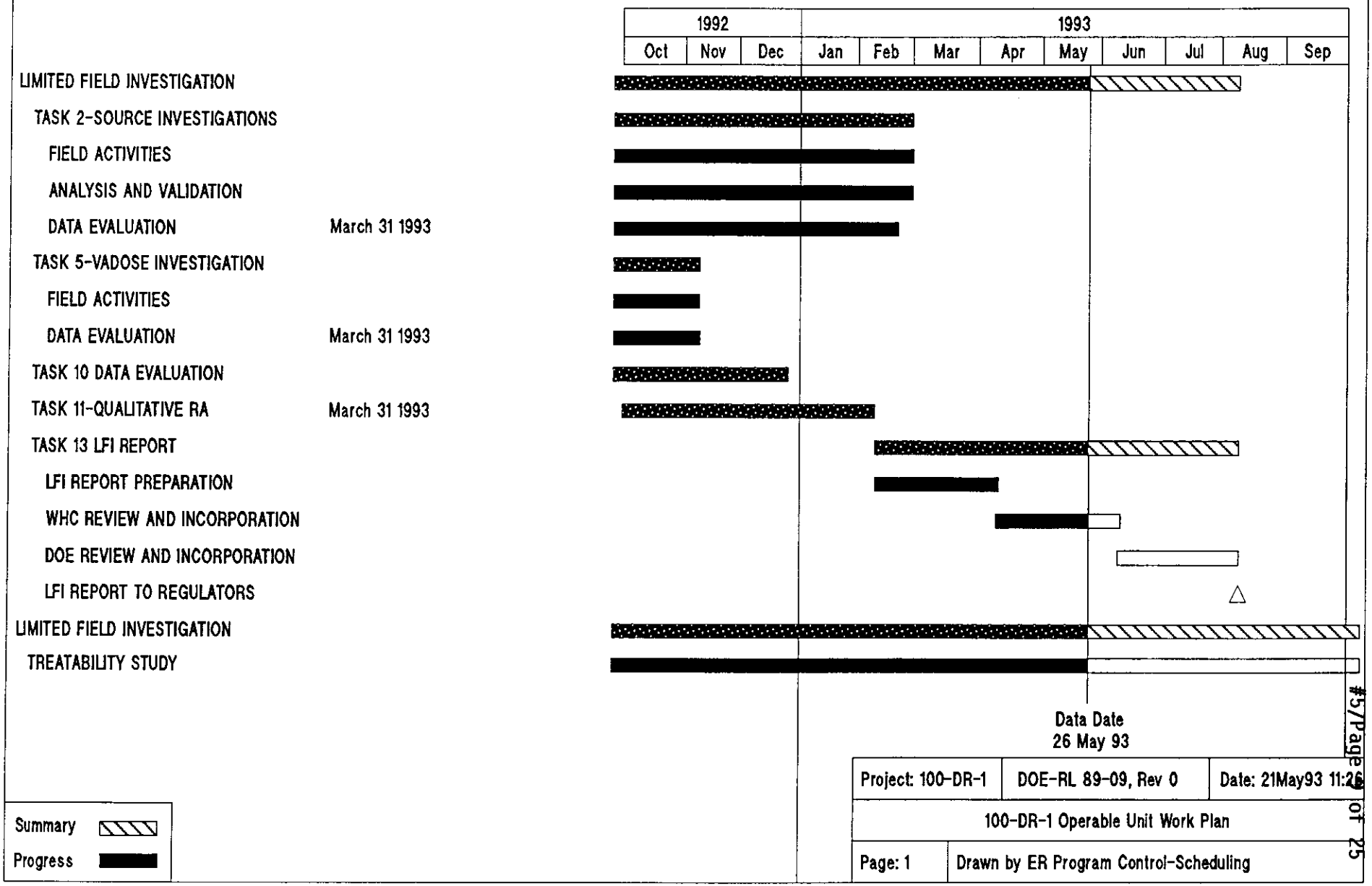
- Qualitative Risk Assessment Report was received on 3-31-93 and was released through Westinghouse Document Control System on 4-19-93. Copies were submitted to DOE-RL for distribution to Regulators.

LFI Report

IT is preparing this document.

- LFI Report Due: 08-09-93.

100-DR-1 OPERABLE UNIT



of 25

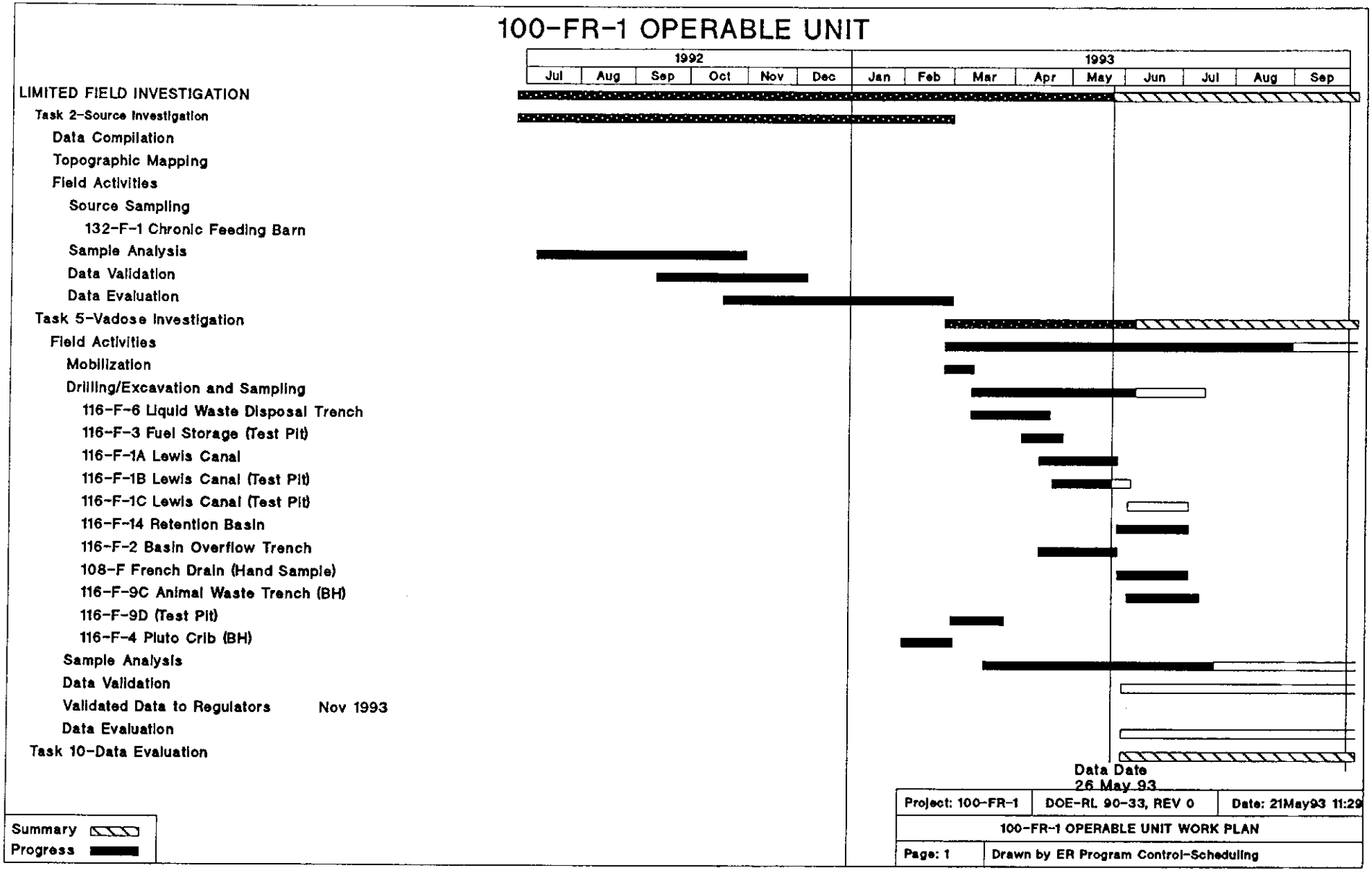
OU MANAGERS MEETING - MAY 93

100-FR-1

- Excavation for the four vadose Test Pits (116-F-1B, 116-F-1C, 116-F-3, and 116-F-9D) has been completed. Slightly elevated counts were encountered in the Animal Waste Leach Trench (116-F-9D) and in the Fuel Storage Basin trench (116-F-3). Peak counts in the 116-F-9D were approximately 250 cpm and approximately 2500 cpm in the 116-F-3 trench.

- Preliminary laboratory data from the Vadose boreholes is beginning to arrive.

100-FR-1 OPERABLE UNIT



100 HR-3 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 5/19/93

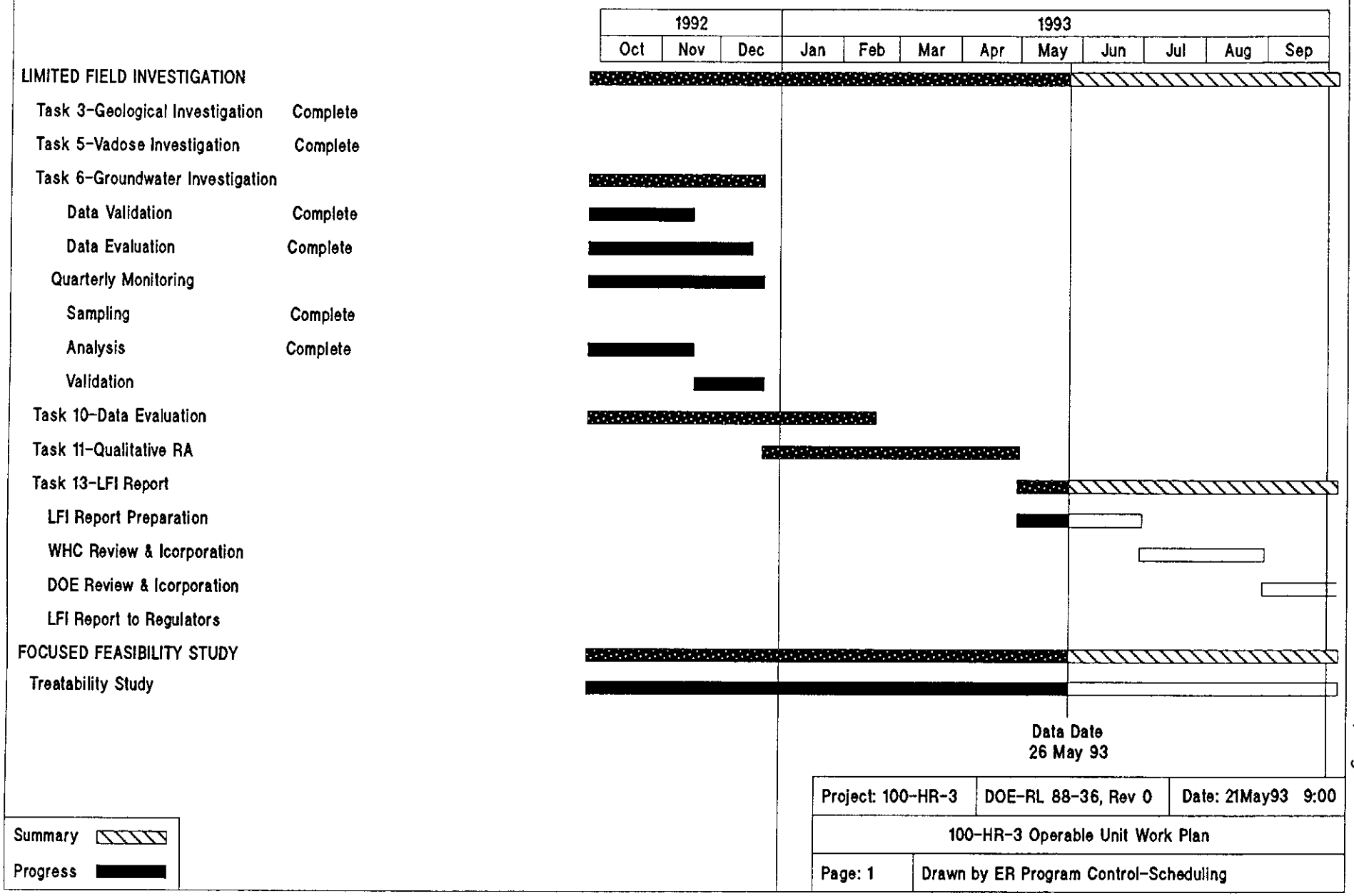
TASK 6 - GROUNDWATER INVESTIGATION

Quarterly Monitoring - Four rounds of groundwater samples have been taken. The fifth round is scheduled for August 1993 and will sample for a reduced analyte list.

Data Validation - First and second round groundwater data has been validated. The third round is being validated.

LFI Report - The LFI Report is in progress and is scheduled for release in August.

100-HR-3 OPERABLE UNIT



FY 1993 ACTIVITIES FOR 100-KR-1

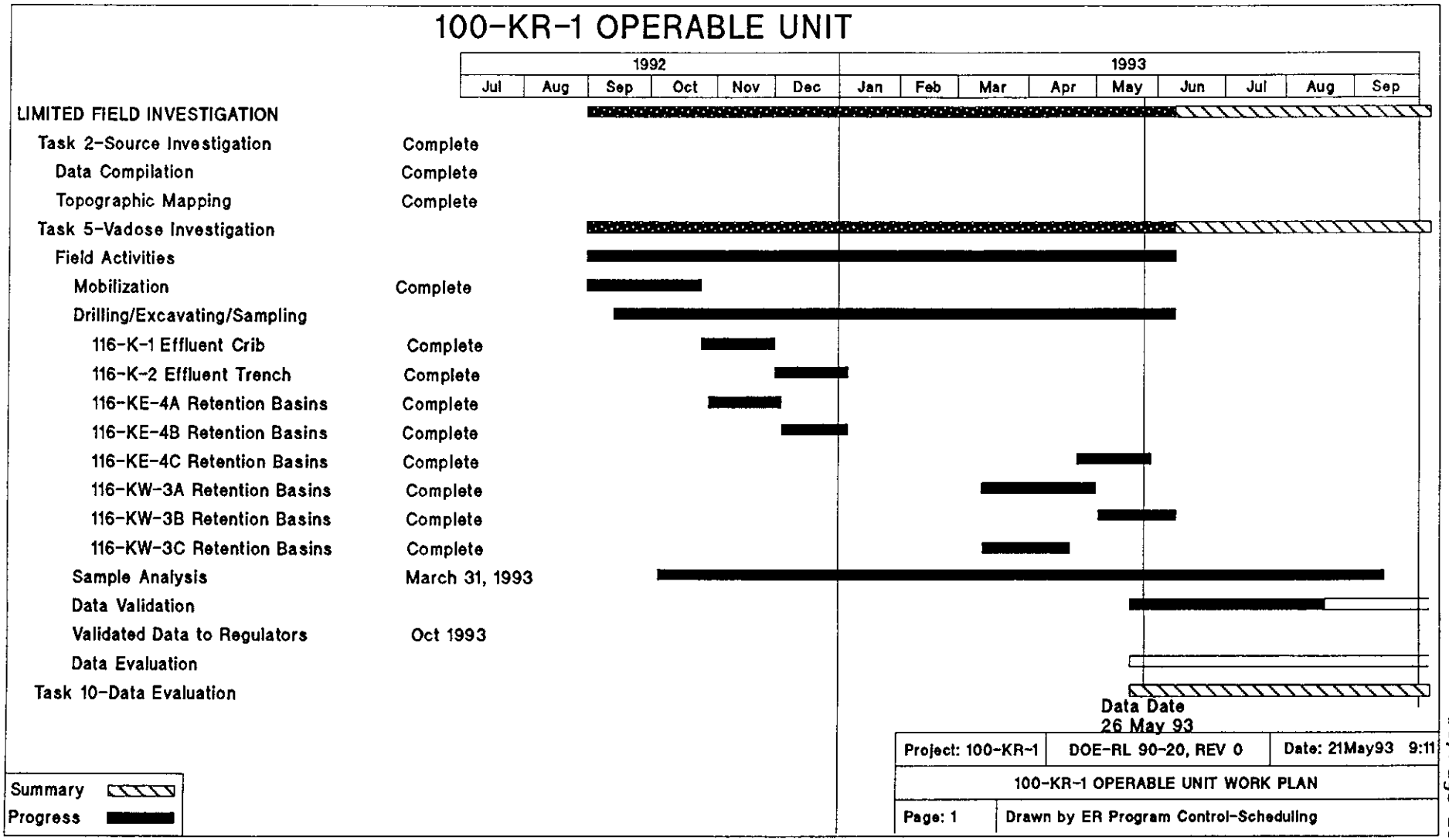
MAY 1993 STATUS REPORT

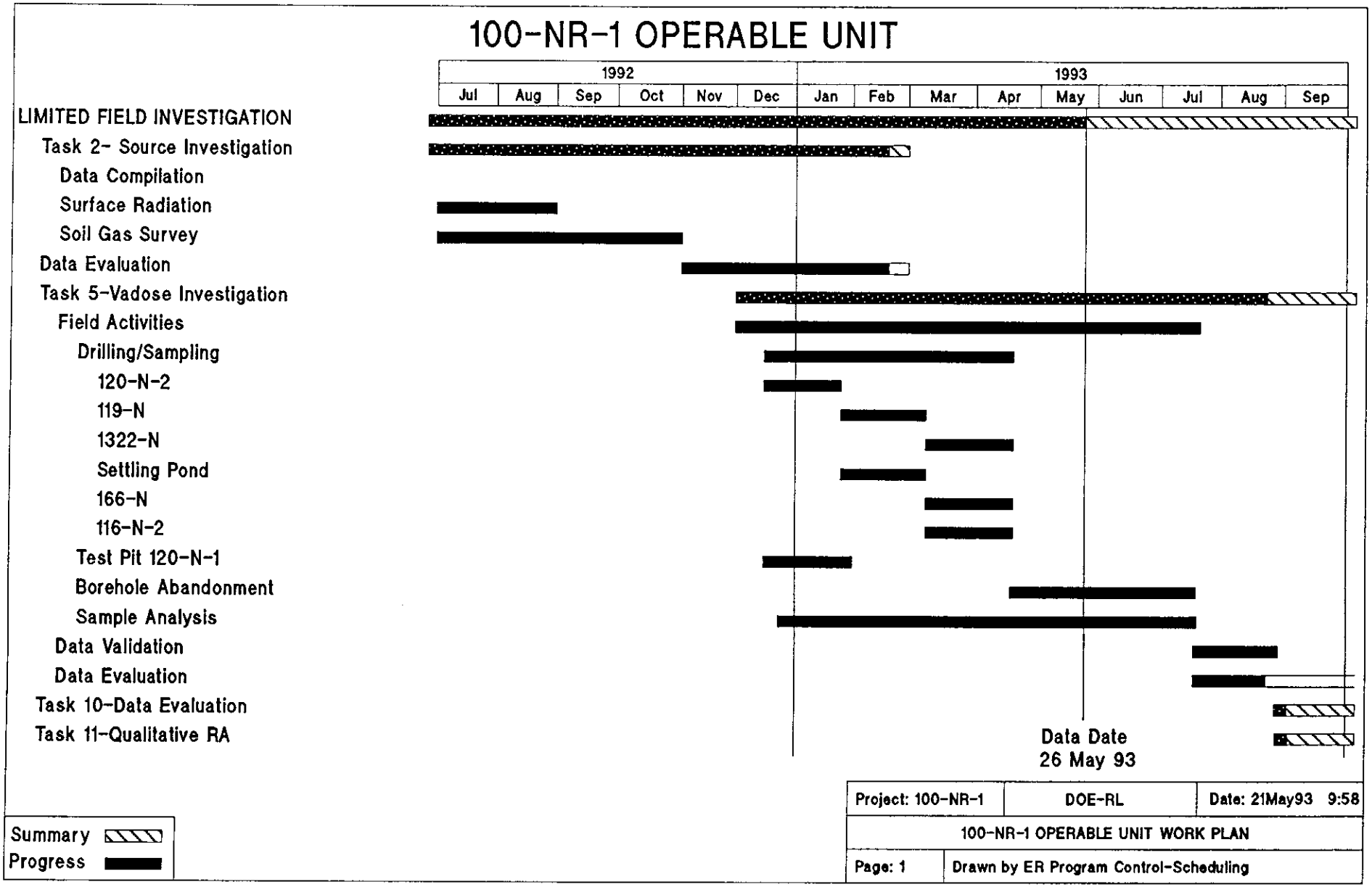
N.M. Naiknimbalkar

o	Four Vadose Boreholes		October/November 1992
	116-K-1	Effluent Crib	Completed
	116-K-2	Effluent Trench	Completed
	116-KE-4A	Retention Basin	Completed
	116-KW-3A	Retention Basin	Completed
o	Four Test Pits		
	116-KE-4B		Completed
	116-KE-4C		Completed
	116-KW-3B		Completed
	116-KW-3C		Completed
o	Sample Analysis		March 93
o	Data Validation		April 93

All vadose borehole and test pit sample validation data was submitted to DOE-RL for distribution to Regulators.

100-KR-1 OPERABLE UNIT




100-NR-1 OPERABLE UNIT
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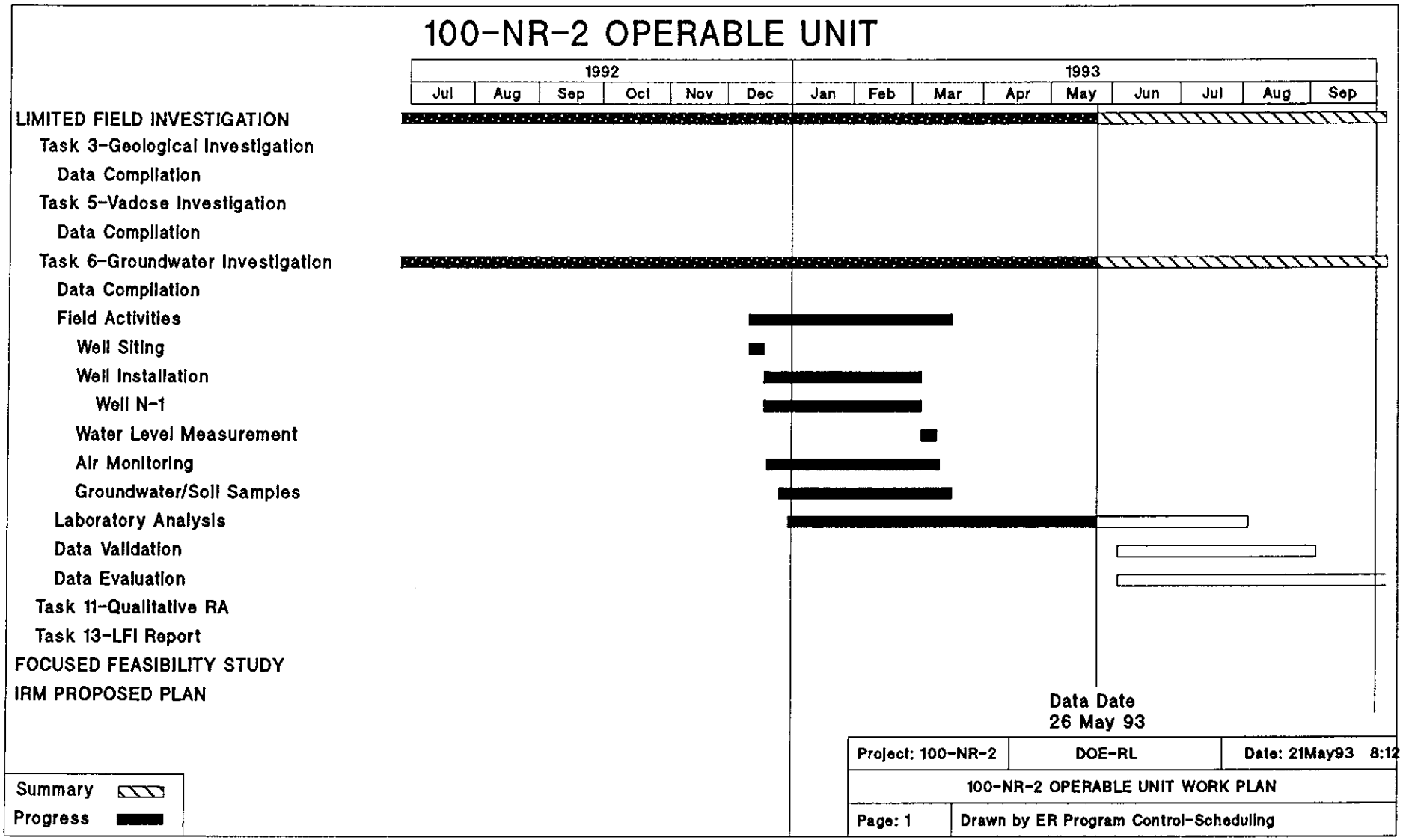
LIMITED FIELD INVESTIGATION
Task 2- Source Investigation
Data Compilation
Surface Radiation
Soil Gas Survey
Data Evaluation
Task 5-Vadose Investigation
Field Activities
Drilling/Sampling
120-N-2
119-N
1322-N
Settling Pond
166-N
116-N-2
Test Pit 120-N-1
Borehole Abandonment
Sample Analysis
Data Validation
Data Evaluation
Task 10-Data Evaluation
Task 11-Qualitative RA
Data Date
26 May 93
Summary
Progress
Project: 100-NR-1
DOE-RL
Date: 21May93 9:58
100-NR-1 OPERABLE UNIT WORK PLAN
Page: 1
Drawn by ER Program Control-Scheduling

100 NR-2 GROUNDWATER OPERABLE UNIT
WORK SUMMARY 5/19/93

TASK 6 - GROUNDWATER INVESTIGATION

Quarterly Monitoring - Three rounds of groundwater samples have been taken.

Data Validation - The soil data has been validated.


100-NR-2 OPERABLE UNIT
1992
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LIMITED FIELD INVESTIGATION
Task 3-Geological Investigation
Data Compilation
Task 5-Vadose Investigation
Data Compilation
Task 6-Groundwater Investigation
Data Compilation
Field Activities
Well Siting
Well Installation
Well N-1
Water Level Measurement
Air Monitoring
Groundwater/Soil Samples
Laboratory Analysis
Data Validation
Data Evaluation
Task 11-Qualitative RA
Task 13-LFI Report
FOCUSED FEASIBILITY STUDY
IRM PROPOSED PLAN
Data Date
26 May 93
Summary
Progress
Project: 100-NR-2
DOE-RL
Date: 21May93 8:12
100-NR-2 OPERABLE UNIT WORK PLAN
Page: 1
Drawn by ER Program Control-Scheduling

Status of 100-Area Wide Activities
May 1992

River Impact Studies

Regulator Review of Columbia River Impact Evaluation Plan. EPA and Ecology commented on Draft B of the Columbia River Impact Evaluation Plan; the comment responses were sent to the regulators on 4/29/93. When the approval is given, a public review draft will be distributed (Primary Document)

River sediment sampling field work completed. The last sample results have just been returned from the lab and are being readied for validation. Report preparation has begun.

Cultural Resources Investigations

Evaluations of past excavations (from 100-K) and consultations with State Historic Preservation Office continues; results of radiocarbon dating have not yet been received.

100-Area Ecological Investigations

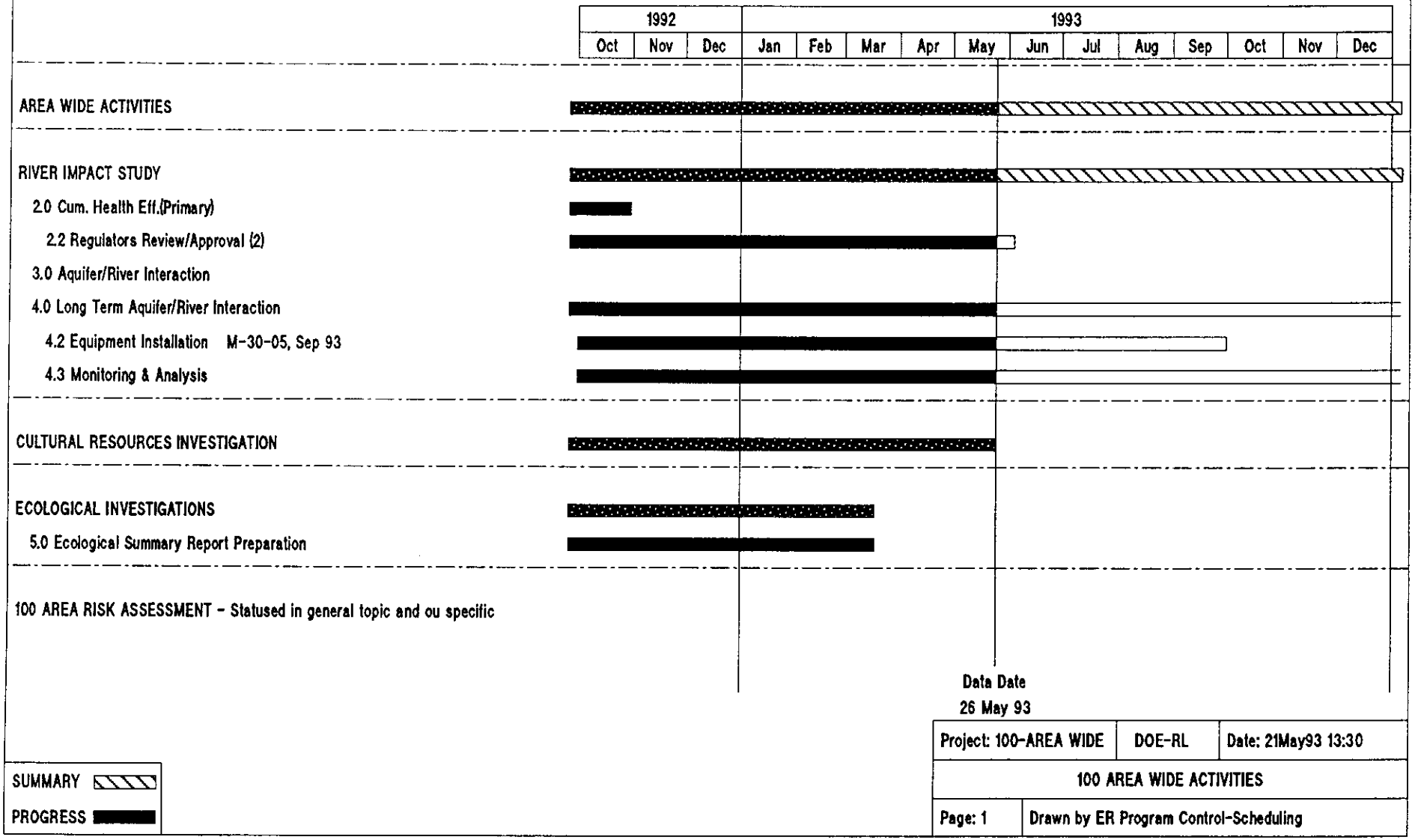
Aquatic Sampling report has recently been distributed

Work has begun to delineate habitats of concern as identified in the Hanford Site Baseline Risk Assessment Methodology Report and the Columbia River Impact Evaluation Plan. (No change)

Statements of work have been issued to PNL to 1) perform a literature search on the ecotoxicology of contaminants of concern for ecological investigations, and 2) make recommendations on methodologies for developing river sediment quality criteria.

A draft of the 100 Areas CERCLA Ecological Investigations report, with analysis of sample results, is in initial review.

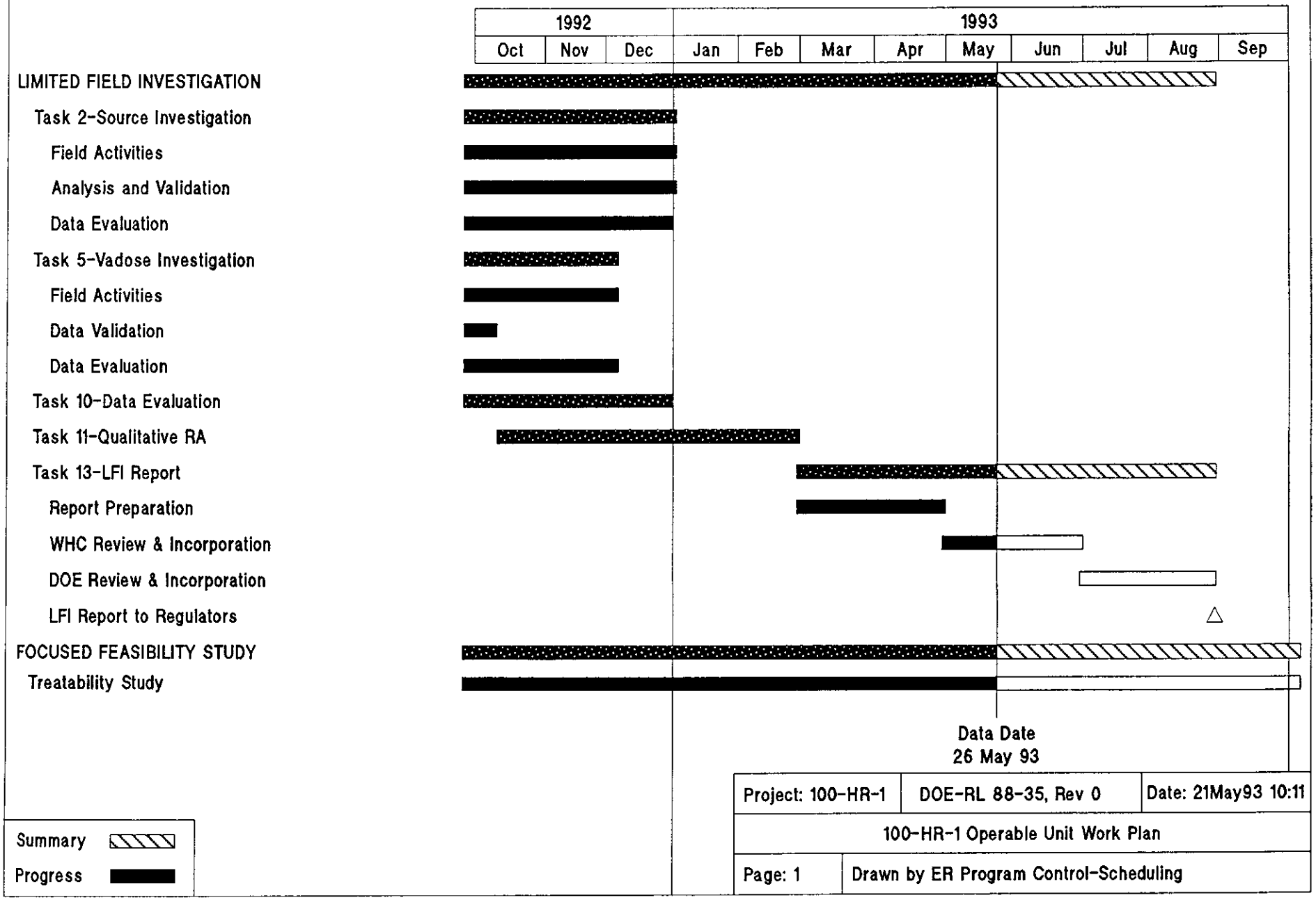
100-AREA WIDE ACTIVITIES



100-HR-2

- Geophysical Exploration of select burial grounds has commenced. This survey is to confirm cell orientations and boundary extent. Selected sites are 118-H-1, 118-H-2, 118-H-3, and the Buried Thimble site. Other sites may be further investigated when needed.

100-HR-1 OPERABLE UNIT



100 AREA TREATABILITY STATUS
Soil Washing

May 1993, Unit Managers Meeting

Soil washing tests are on schedule. Wet sieving of samples from the 116-D-1B trench and the test pit near the middle of the 116-C-1 trench has been completed. Preliminary gamma scanning by particle size has been completed for soils from the 116-D-1B trench. The radioactivity level in coarse soils from 116-D-1B was found to be two to three orders of magnitude lower than in soil particles less than 0.25 mm. The soils in 116-D-1B are mostly coarse sand with 80% to 85% of the particles greater than 0.25 mm in diameter.

PNL has indicated that a visit to the laboratory may be scheduled any time during the first week of June.

DON'T SAY IT --- *Write It!*

DATE: May 10, 1993

TO: Jack Donnelly, Ecology Kennewick
Paul Beaver, EPA B5-01

FROM: Eric Goller, RL A5-19
Telephone: 376-7326

cc: Jim Patterson, WHC H6-27 (w/o atts.)
Bob Henckel, WHC H6-02 (w/o atts.)
Alan Krug, WHC H6-02 (w/o atts.)
Bob Scheck, D&M G1-01
Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-DR-1 OU LFI SOURCE INVESTIGATION VALIDATED DATA

Attached please find a document reporting validated data summaries from 100-DR-1 OU LFI source investigations. The document title and WHC identification number are:

WHC-SD-EN-TI-145 Data Validation Report for the 100-DR-1 Operable Unit Electrical Facilities, rev. 0.

Please feel free to contact me with any comments or questions regarding this document. In addition, comments or questions regarding the technical elements of this document can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

DON'T SAY IT --- *Write It!*

DATE: May 10, 1993

TO: Dennis Faulk, EPA B5-01
Ted Wooley, Ecology Kennewick

FROM: Eric Goller, RL A5-19
Telephone: 376-7326

cc: Jim Patterson, WHC H6-27 (w/o atts.)
Bob Henckel, WHC H6-02 (w/o atts.)
Alan Krug, WHC H6-02 (w/o atts.)
D Goswami, Ecology Kennewick (w/o atts.)
Bob Scheck, D&M G1-01
Kay Kimmel, D&M G1-01 (w/o atts.)

SUBJECT: 100-BC-5 OU LFI GROUNDWATER INVESTIGATION VALIDATED DATA

Attached please find a document reporting validated data summaries from 100-BC-5 OU LFI groundwater investigations. The document title and WHC identification number is:

WHC-SD-EN-TI-139 Data Validation Report for the 100-BC-5 Operable Unit Second Round, rev 0.

Please feel free to contact me with any comments or questions regarding this document. In addition, comments or questions regarding the technical elements of this document can be directed to Bob Henckel (376-2091) or Alan Krug (376-5634).

DON'T SAY IT --- *Write It!*

DATE: May 26, 1993

TO: 100-B/C Area Unit Managers

FROM: K. O. Kytola H6-02

Telephone: 2-1662

cc: A. D. Krug H6-02
R. P. Henckel H6-02 RPH

SUBJECT: **WASTE CONTRAL PLAN FOR THE 100-BC-2 FIELD INVESTIGATIONS**

Attached for your review and approval is the waste control plan for the 100-BC-2 Limited Field Investigation (LFI) wastes. This plan identifies the waste control site as the same site that is currently storing the waste generated by the 100-BC-1 LFI. Please be prepared to sign the waste control plan on June 4, 1993.

DON'T SAY IT --- *Write It!*

DATE: May 26, 1993

TO: 100-B/C Area Unit Managers

FROM: K. O. Kytola H6-02

Telephone: 2-1662

cc: A. D. Krug H6-02
R. P. Henckel H6-02 RPH

SUBJECT: **DESCRIPTION OF WORK FOR THE 100-BC-2 VADOSE INVESTIGATION**

Attached for your review and approval is the "Description of Work for the 100-BC-2 Vadose Boreholes: 116-C-2A Crib and 116-C-2C Sand Filter. These activities are in association with the 100-BC-2 Operable Unit work plan that is currently out for regulatory review. Please review and sign the Description of Work by June 14, 1993. The field activities are scheduled to begin on July 1, 1993.

WASTE CONTROL PLAN REV 1

The document is revised to relocate the KR-1 waste from current location to a new location within KR-1 Operable Unit. (See attachment 2)

Work Scope Description Task 5 (Vadose Investigation) of 100-KR-1 and Task 6 (Groundwater Investigation) of 100-KR-4 Operable Units.

List Constituents of Concern See attachment 1

Site Description 100-KR-1 and 100-KR-4 Operable Units, Hanford Site, Richland, Washington.

References DOE/RL-90-20 and DOE/RL-90-21 Rev. 0 Date Approved September 1992

Safety Class 3 Impact Level 3

N.M. Naiknimbalkar N.M. Naiknimbalkar Date 5-12-93
Preparer/Project RI Coord. Print/Sign Name

Field Team Leader/
Cognizant Engineer T. Spicer IDW Coordinator L. Russell/G. Hopkins

Planned Start and Finish Dates: From May 1992 To June 1992

Waste Storage Facility ID Number(s) N/A

9297.045

Field Screening Methods

Method	Frequency	Reference	Detection Range	Analyst
OVM	Continuous	EII 3.4	.1-1000 ppm	Geologist
GM	Per RWP	WHC IP 0692	0-100,000cpm	HPT
PAM	Per RWP	WHC IP 0692	0-100,000cpm	HPT
Ludlum (19c)	Continuous	EII 3.4	0-100,000cpm	Geologist
pH	Ex Borehole	Per HWOP	1-14	Geologist
Colormetric Tubes	Per HWOP	Per HWOP	Varies with	Site Safety Officer containment

Methods of Validating Field Screening Data

Method	Frequency	Reference	Threshold	Analyst
Calibration of	Per EII 3.2	Per EII 3.2	Per EII 3.2	Geologist
Instrument				Site Safety Officer
				HPT

APPROVALS (Print/Sign Name and Date)

N.M. Naiknimbalkar N.M. Naiknimbalkar 5/13/93
Project/RI Coordinator

T.W. Spicer T.W. Spicer 5/17/93
Field Team Leader/Cognizant Engineer

G.G. Hopkins G.G. Hopkins 5-17-93
IDW Coordinator

Gary Corrigan Gary Corrigan 5-13-93
Quality Assurance (if required)

Safety Function: N/A

Waste Site Coordinate Location See attachment 2 for location of waste sites 116-K-1, 116-K-2, 116-KE-4A, 116-KW-3A

Waste Container Storage Area(s) Coordinate Location(s) See attachment 2. The location has been verbally approved by Unit Managers during April UM meeting. NK5880 / WK3660 (116-K-1 Crib Fences Area)

Requirements for Soil Pile Sampling (if any) N/A

Nonregulated Material Disposal Location(s) Central Waste Landfill (paper, plastic, etc.) Soils, water and slurry will be dumped near borehole or well outside exclusion zone.

Sketch of Work Site

See attachment 2.

APPROVALS (Print/Sign Name and Date)

L.E. Gadbois LE Gadbois, May 17, 1993
Lead Regulatory Agency Representative

Eric Goller Eric Goller 5/18/93
DOE/RL

N.M. Naiknimbalkar N.M. Naiknimbalkar 5/17/93
Project/RI Coordinator

100-KR-1 and 100-KR-4 Operable Units

List of Analytes (Soil Samples)

ICP/AA metals
Mercury
Cyanide
VOA
Semi-VOA
PCB's/Pesticides
Anions
- Fluoride
- Nitrate
- Sulfate

Gross alpha
Gross beta
Gamma spec.
Sr-90
C-14
U-235, 238
Pu-239, 240
Am-241
Total Activity (222S Lab)

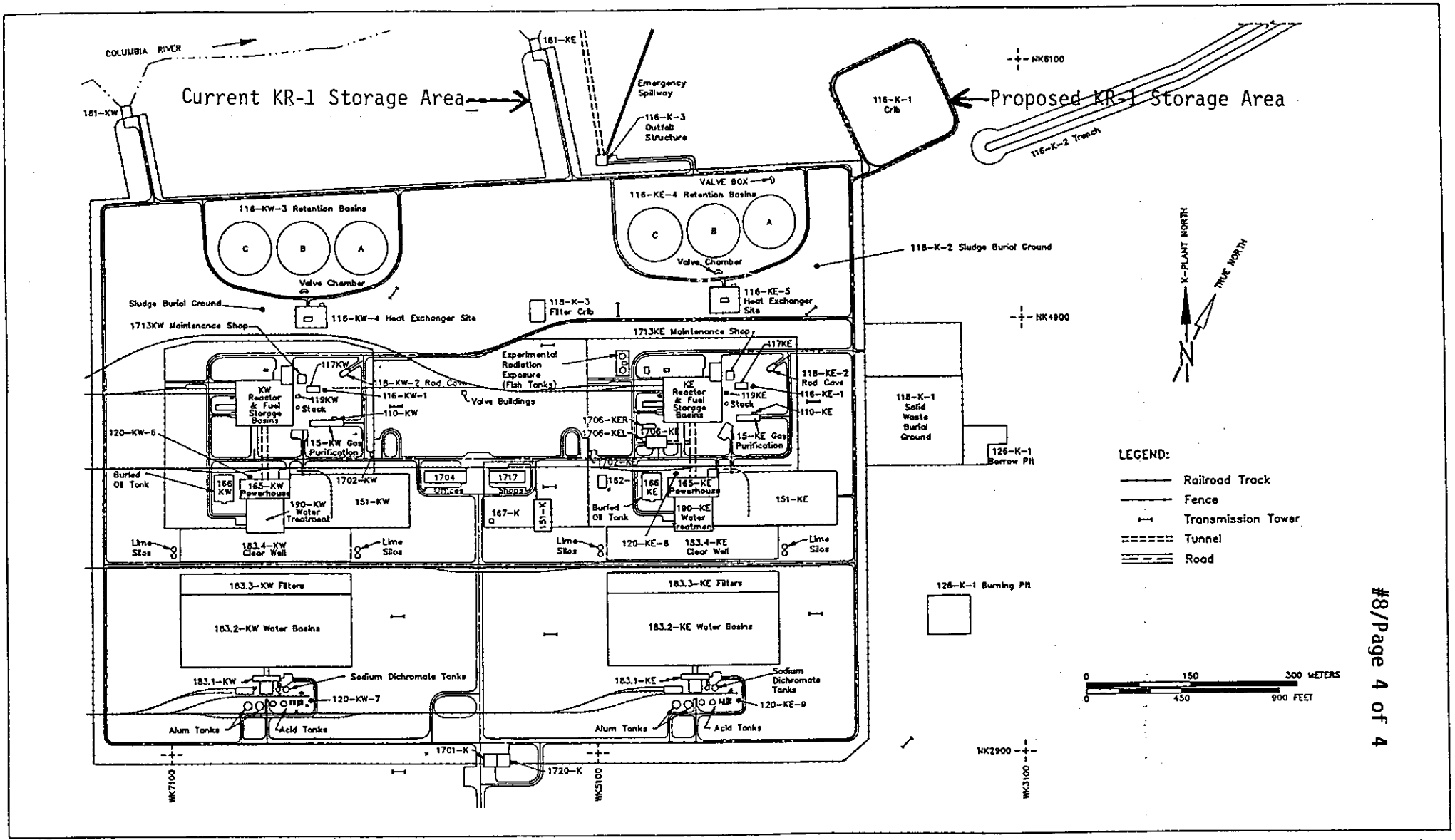
List of Analytes (Groundwater)

ICP/AA metals
Mercury
Cyanide
VOA
Semi-VOA
PCB's/Pesticides
Anions
- Fluoride
- Sulfate

pH
Conductivity
Gross alpha
Gross beta
Gamma spec.
Sr-90
U-235, 238
Pu-239, 240
Am-241

C-14
Tritium
Tc-99
Total Activity (222S Lab)

ATTACHMENT 1


Current KR-1 Storage Area
Proposed KR-1 Storage Area
COLUMBIA RIVER
181-KW
181-KE
Emergency Spillway
116-K-3 Outfall Structure
116-K-1 Crib
116-K-2 Trench
NK6100
VALVE BOX
116-KE-4 Retention Basins
116-KW-3 Retention Basins
C
B
A
Valve Chamber
116-K-2 Sludge Burial Ground
Sludge Burial Ground
116-KW-4 Heat Exchanger Site
116-K-3 Filter Crib
116-KE-5 Heat Exchanger Site
1713KW Maintenance Shop
1713KE Maintenance Shop
NK4900
K-PLANT NORTH
TRUE NORTH
N
Experimental Radiation Exposure (Fish Tanks)
117KW
117KE
118-KW-2 Rod Cove
116-KW-1
119KW
Stack
110-KW
Valve Buildings
KW Reactor & Fuel Storage Basins
KE Reactor & Fuel Storage Basins
118-KE-2 Rod Cove
116-KE-1
119KE
110-KE
1706-KER
1706-KEL
1706-KE
120-KW-6
115-KW Gas Purification
115-KE Gas Purification
118-K-1 Solid Waste Burial Ground
126-K-1 Borrow Pit
Buried Oil Tank
166 KW
165-KW Powerhouse
1702-KW
190-KW Water Treatment
151-KW
1704 Offices
1717 Shops
167-K
151-K
182-K
166 KE
165-KE Powerhouse
Buried Oil Tank
190-KE Water Treatment
151-KE
Lime Silos
183.4-KW Clear Well
120-KE-8
183.4-KE Clear Well
LEGEND:
Railroad Track
Fence
Transmission Tower
Tunnel
Road
126-K-1 Burning Pit
183.3-KW Filters
183.2-KW Water Basins
183.3-KE Filters
183.2-KE Water Basins
183.1-KW
Sodium Dichromate Tanks
120-KW-7
Alum Tanks
Acid Tanks
183.1-KE
120-KE-9
1701-K
1720-K
NK7100
NK5100
NK2900
NK3100
0 150 300 METERS
0 450 900 FEET
#8/Page 4 of 4
4-16-92 903-1277/36322

STATUS OF M-30-05 ACTIVITIES

" Install equipment and initiate monitoring activities to perform long-term evaluation of river/aquifer interaction . . . " (September 1993)

Unit Managers Meeting 5/26/93

STATUS OF M-30-05 ACTIVITIES Continued . . .

EPA Comments on DOE/RL-92-64 (M-30-04)

- Comment responses informally transmitted at 4/28/93 unit managers' meeting -- formal transmittal in process

Field Equipment Installations

- Continued operations at 100-B, 100-H, and 100-F Areas; conductivity probe at 100-H
- Obtained data from temporary arrays at 100-K (February), 100-D (April), and 100-F (May)
- New automated stations completed in May at 100-K and 100-D; remaining stations at 100-F, 100-B, and 100-H planned for June

STATUS OF M-30-05 ACTIVITIES Continued . . .

Initiate Monitoring Activities for Long-Term Evaluation

- Draft planning document covers tasks associated with M-30-05, including equipment installations and applications for data
- Satisfies need to document M-30-05 activities regarding "Installation of field equipment" and "Initiation of monitoring activities"
- Synopsis of plan included with NPL Agreement regarding milestone completion criteria

STATUS OF M-30-05 ACTIVITIES Continued . . .

Tasks include in NPL Agreement

- Analyze Existing Information on Groundwater Direction and Rate of Flow
  (Update to Hartman and Peterson, 1992)
- Deploy Temporary Transducer Arrays
- Install Automated Water Level Recorders
- Continue Steel Tape Measurements
- Obtain Borehole Velocity Measurements
- Initiate Field Activities for Bank Storage/River Interaction Studies
- Maintain Field Data Logger Systems Capability

STATUS OF M-30-05 ACTIVITIES Continued . . .

Task 1: Analyze Existing Flow Regime Information

- Regional Flow Regime
- For each reactor area:
  - > Water Table Maps (Historical conditions, seasonal high and low; flow direction and gradients; inland extent of river influence)
  - > Hydrostratigraphy (Units; profiles perpendicular and parallel to river)
  - > Vertical Gradients, Other Results . . .
- Columbia River Flow Characteristics
  - > Hydrographs from river stations, gradients
- Aquifer Test Results

100-HR-3 GROUNDWATER TREATABILITY TESTS

EX SITU REDUCTION/PRECIPITATION - ION EXCHANGE

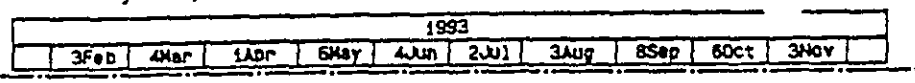
- CURRENT STATUS
  - COMPLETED THE CHROMIUM REDUCTION/PRECIPITATION TESTS
  - SAMPLES ARE AWAITING LABORATORY ANALYSIS
  - FORMATION OF A NON SETTLEABLE PINFLOC (COLLOIDIAL SUSPENSION)
    - CORRECTIVE ACTIONS: POLYELECTROLYTE POLYMER
- NEXT LABORATORY PHASE
  - BEGAN THE URANYL PHOSPHATE PRECIPITATION TESTING
  - ION EXCHANGE RESINS BEING CONDITIONED

FLS: Removal of Chromate, Nitrate, & Uranium (VI)

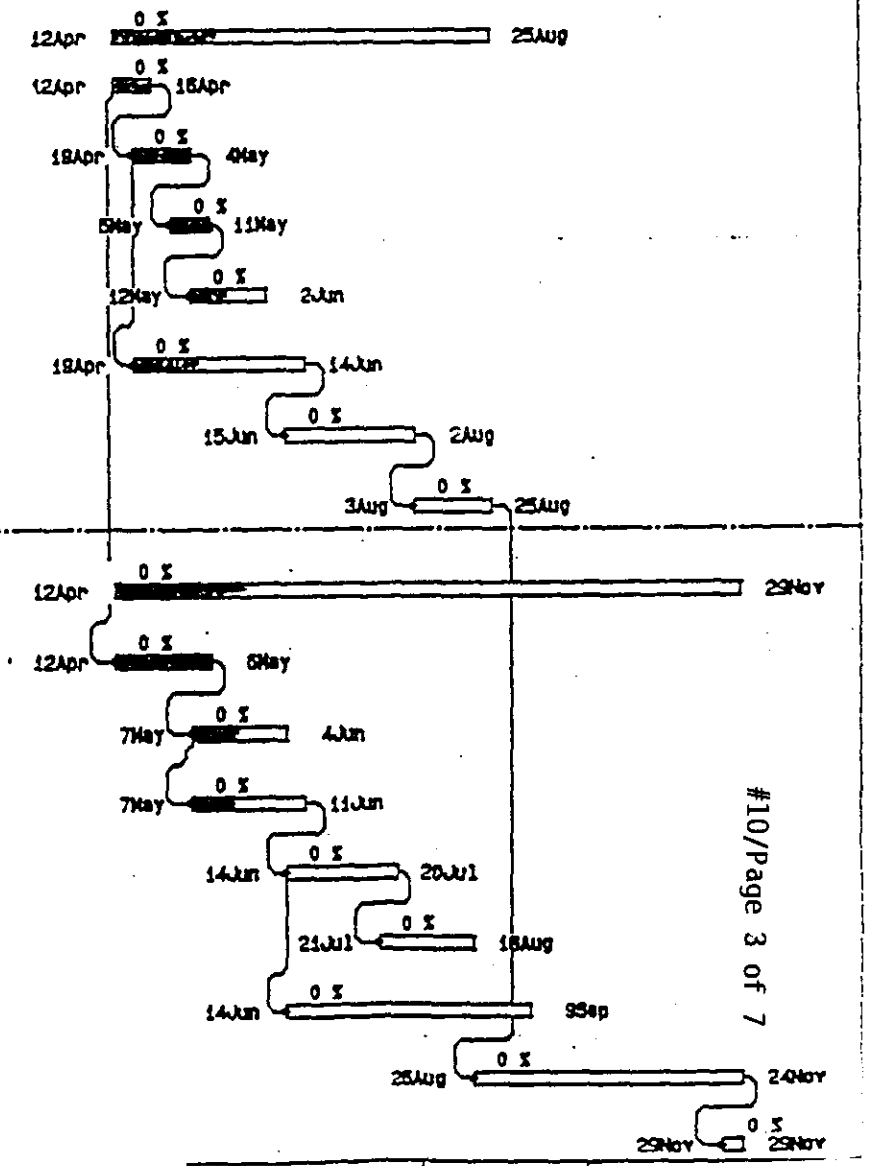
Actual setup bar

CODE1

January 27, 1993.



09				
09	GROUNDWATER TREATABILITY TESTS	160.000		
0901				
0901	PppTn TESTS	95.000		
090101	SET UP (CENTRIFUGE, PUMPS, AND OTHER APPARATUS)	5.000	M. BECK	
090102	FeSO4-Na2S	12.000	M. BECK	
090103	SET UP (CENTRIFUGE, PUMPS, AND OTHER APPARATUS)	5.000	M. BECK	
090104	Na2HPO4	15.000	M. BECK	
090105	ANALYSIS (U, Cr, NO3)	40.000	T. DALE	
090106	KINETIC STUDY/CONFIRMATORY TESTS	33.000	M. BECK	
090107	ANALYSIS (U, Cr, NO3)	17.000	T. DALE	
0902				
0902	ANION TESTS	160.000		
090201	SET UP (CENTRIFUGE, PUMPS, AND OTHER APPARATUS)	19.000	M. BECK	
090202	CONTACTING TESTS	20.000	M. BECK	
090203	ANALYSIS (U, Cr, NO3)	25.000	T. DALE	
090204	BREAKTHROUGH/CONFIRMATORY TESTS	25.000	M. BECK	
090205	CYCLING TESTS	21.000	M. BECK	
090207	ANALYSIS (U, Cr, NO3)	61.000	T. DALE	
090208	WRITE REPORT	64.000	M. BECK	
090209	ISSUE REPORT	1.000	M. BECK	



Legend

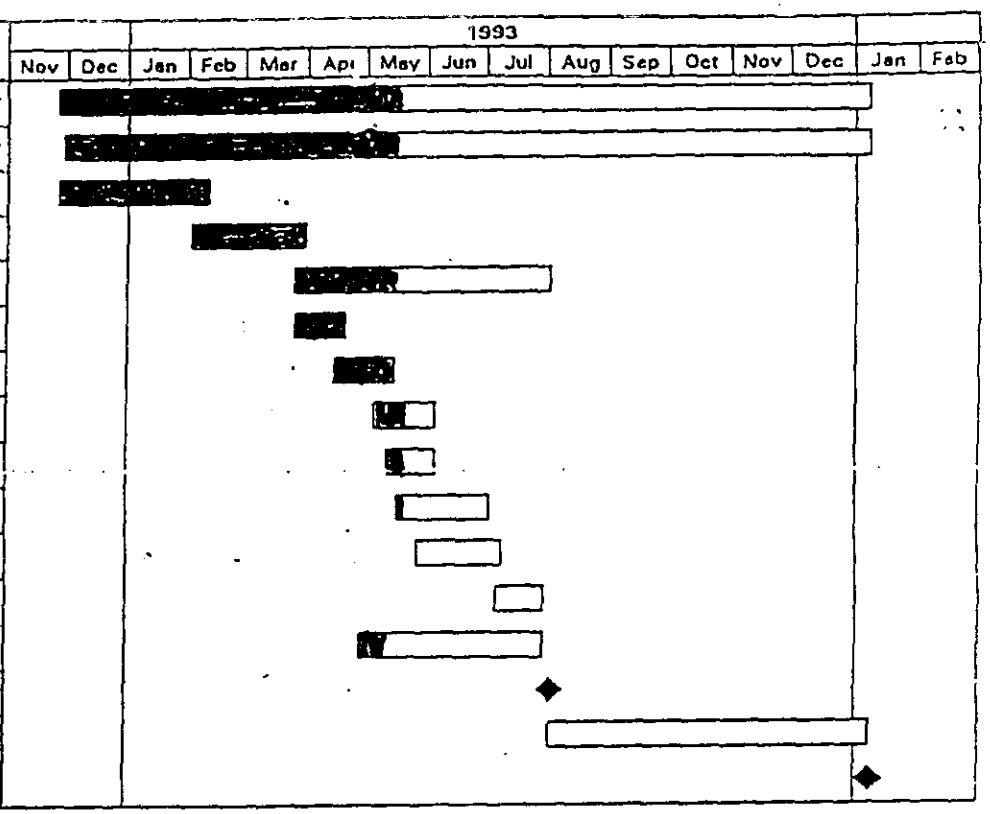
Early CPM

Project: GWTT	GWTT	Date: 9Apr93 11:52
GROUNDWATER TREATABILITY TESTS		
Page: 1	Drawn by OWIKNET Graphics	

BIODENITRIFICATION

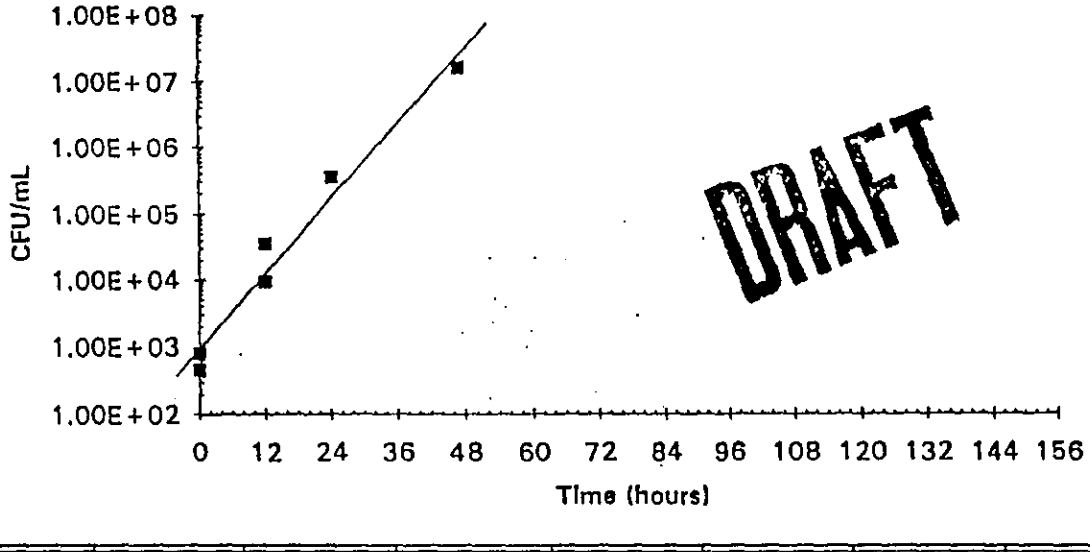
- CURRENT STATUS
  - EXPERIMENTS ON THE EFFECT OF pH HAVE BEEN COMPLETED
  - EXPERIMENTS BEGINNING ON:
    - CARBON RATIOS;
    - TEMPERATURE;
    - CARBON SOURCE.

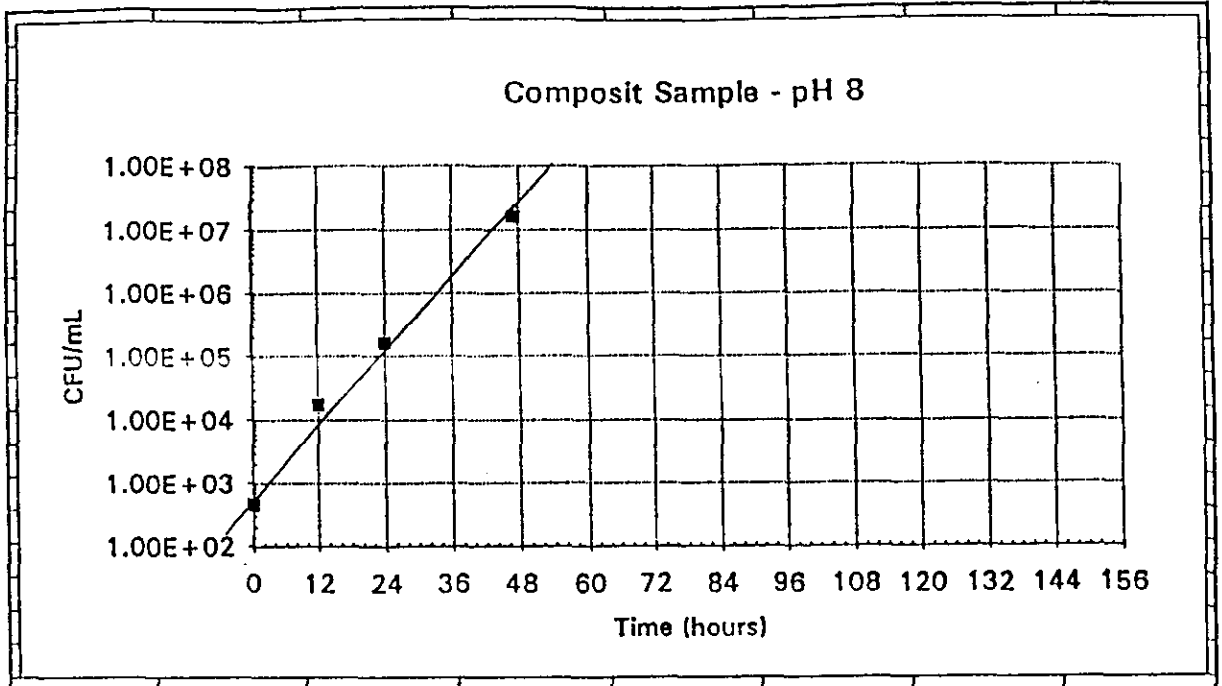
ID	Name	Scheduled Start	Scheduled Finish
1	100-HR-3 BIODENITRIFICATION	11/26/92	1/7/94
2	QUALITY ASSURANCE	11/29/92	1/7/94
3	PREPARE TEST DOCUMENTS	11/26/92	2/10/93
9	TEST SET UP	2/2/93	3/30/93
16	TESTING	3/25/93	8/2/93
17	Task 3.4.1 InhibitionTests	3/25/93	4/19/93
24	Task 3.4.3 pH Tests	4/14/93	5/14/93
31	Task 3.4.2 Carbon Ratios	5/4/93	6/4/93
38	Task 3.4.4 Temperature	5/11/93	6/4/93
45	Task 3.4.5 Carbon Source	5/16/93	7/2/93
52	Task 3.4.6 Large Volume Denitrification	5/26/93	7/8/93
60	Task 3.4.7 Final Confirmation Tests	7/6/93	7/30/93
68	Data Analysis and Draft Final Report Preparation	4/27/93	7/30/93
69	Submit Draft Report to WHC	8/2/93	8/2/93
70	FINAL REPORT REVIEWS	8/2/93	1/7/94
76	ISSUE FINAL REPORT	1/7/94	1/7/94

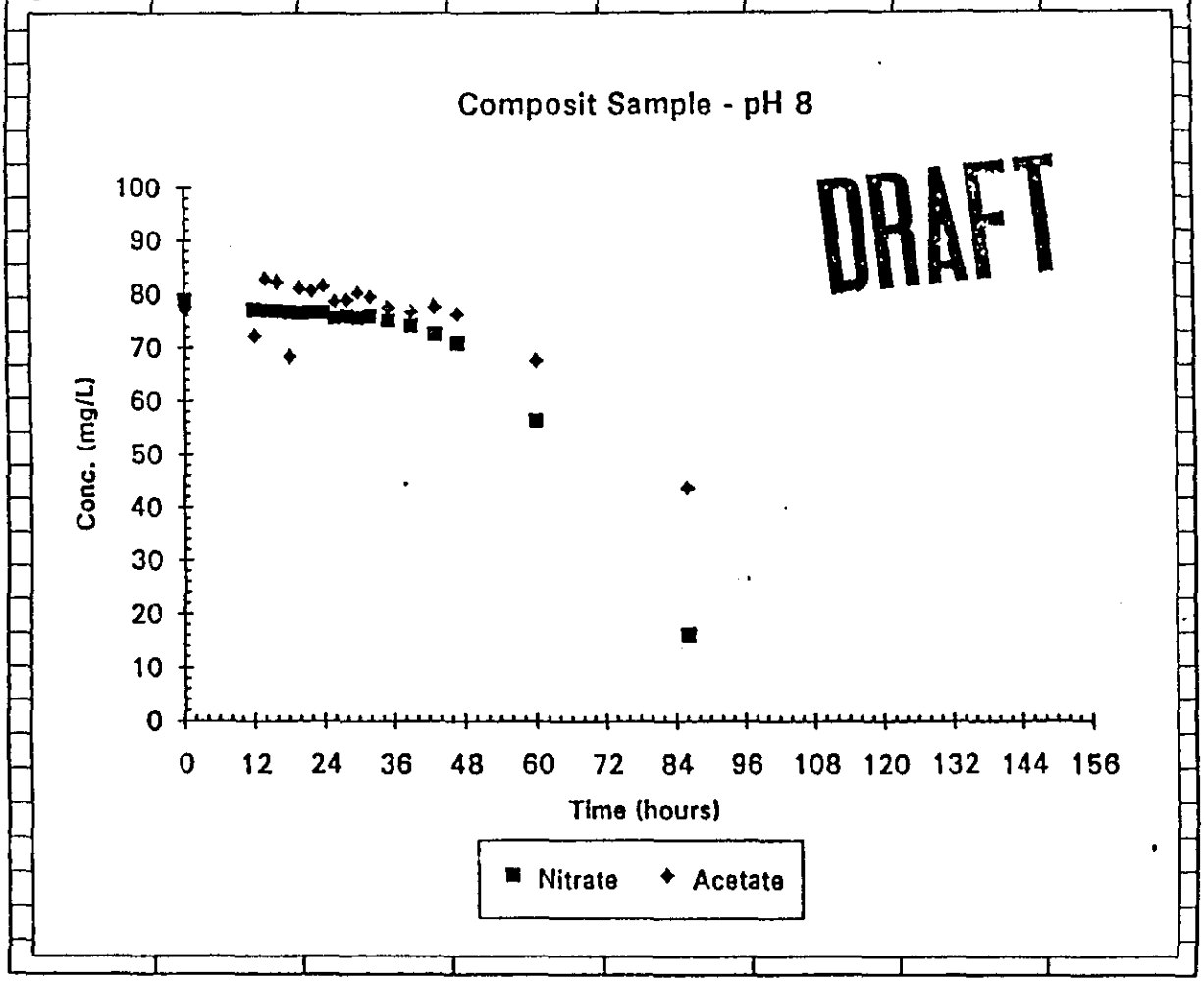


Project: 100 Area Biodenitrification
Date: 4/30/93

Critical
Noncritical
Progress
Milestone
Summary
Rolled Up







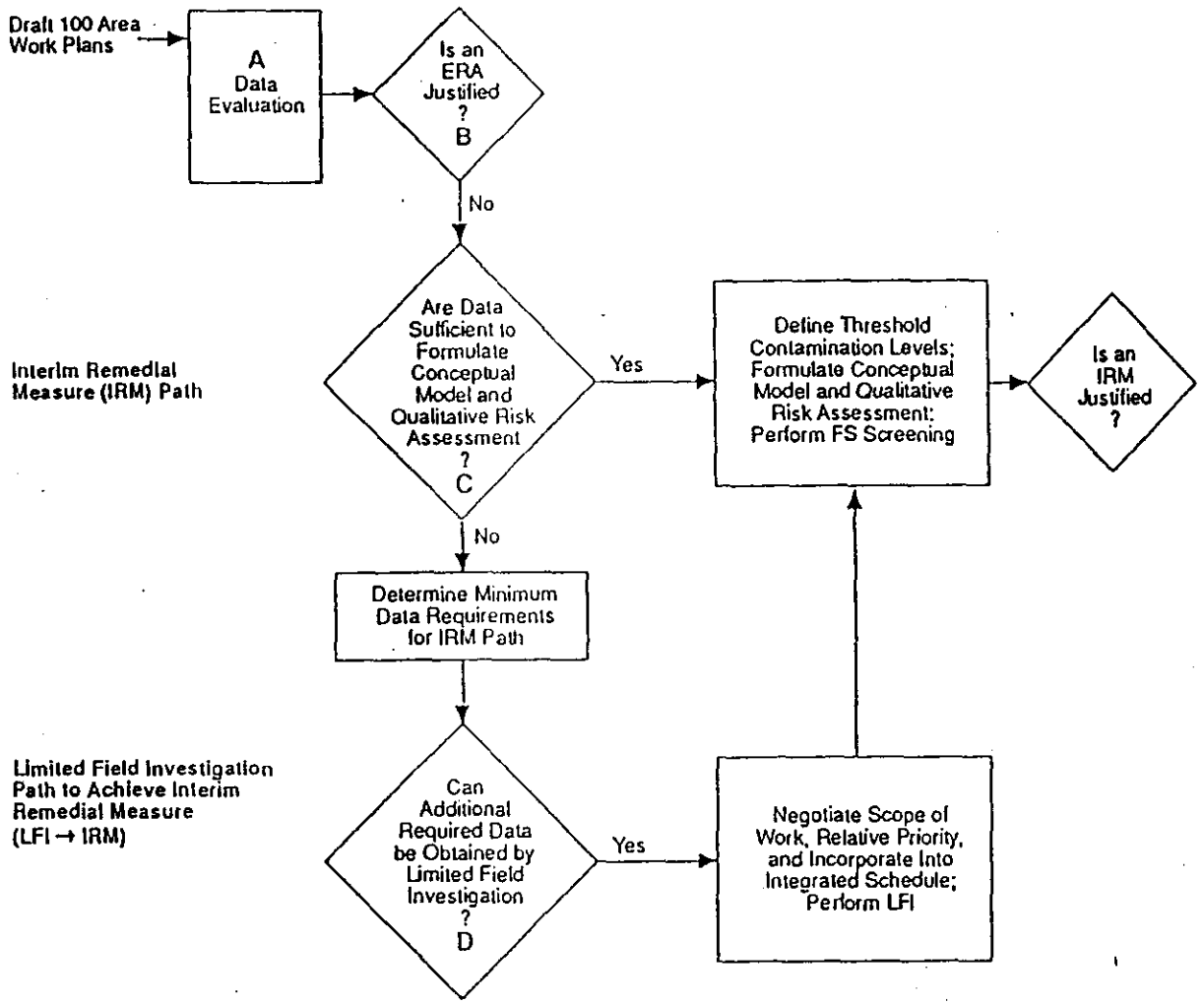
116-C-2C Pluto Crib Sand Filter 100-BC-2 Operable Unit

Proposal to not perform additional limited field sampling.

Presented at the April 1993 Unit Managers Meeting

April 28, 1993

Interim Remedial Measure (IRM) Pathway



Based on Hanford Site Past-Practice Strategy

Are data sufficient to:

- Formulate the Conceptual Model?

- Perform a Qualitative Risk Assessment?

Background Information

Years in service:

17 years (1952-1969)

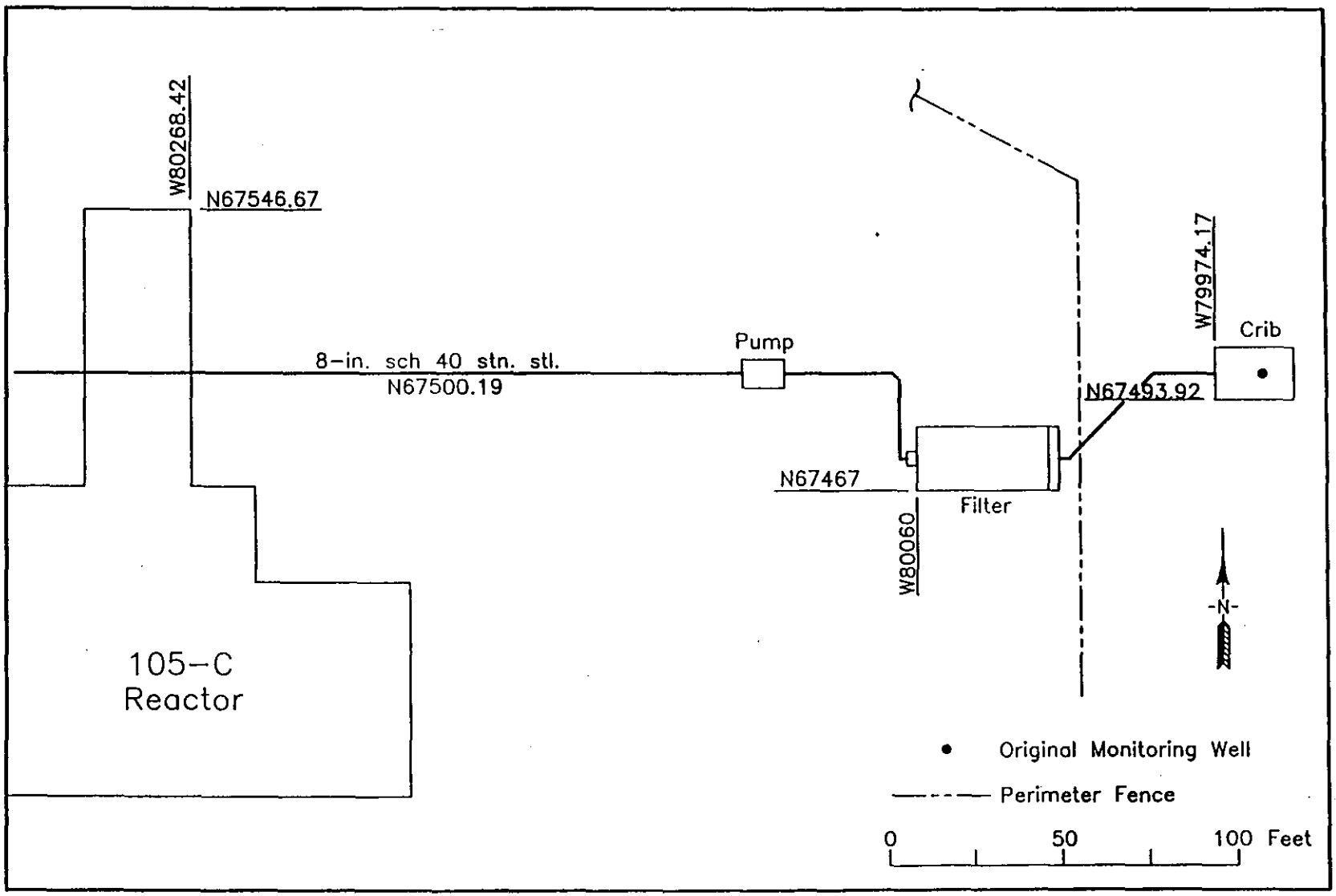
Waste Received:

Contaminated reactor cooling water from fuel cladding failures, spacer and hardware decontamination, and irradiated fuel examination facility wastes. Estimated total volume: 7,500,000 Liters.

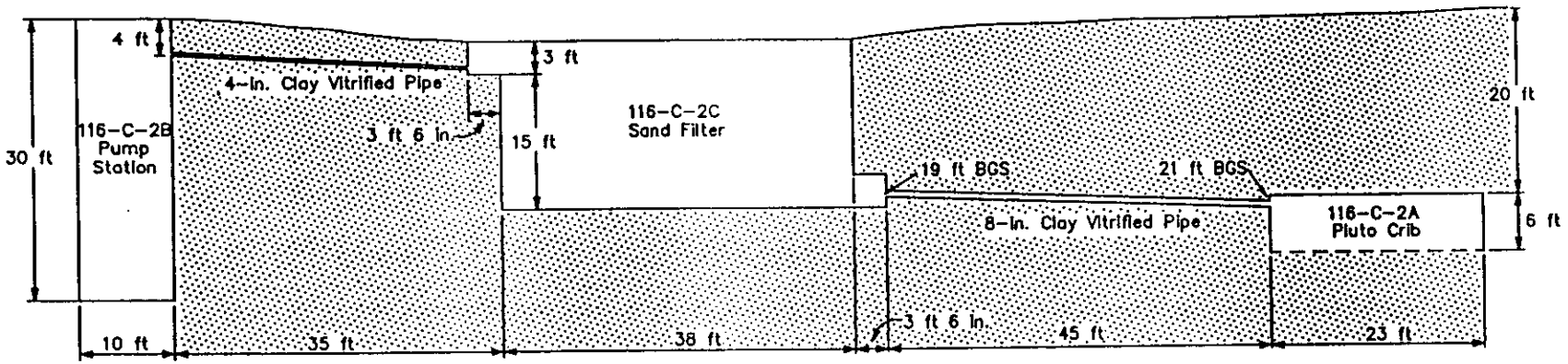
Dimensions:

18 ft wide X 38 ft long X 18 ft deep

116-C-2 Pluto Crib System (Top View)

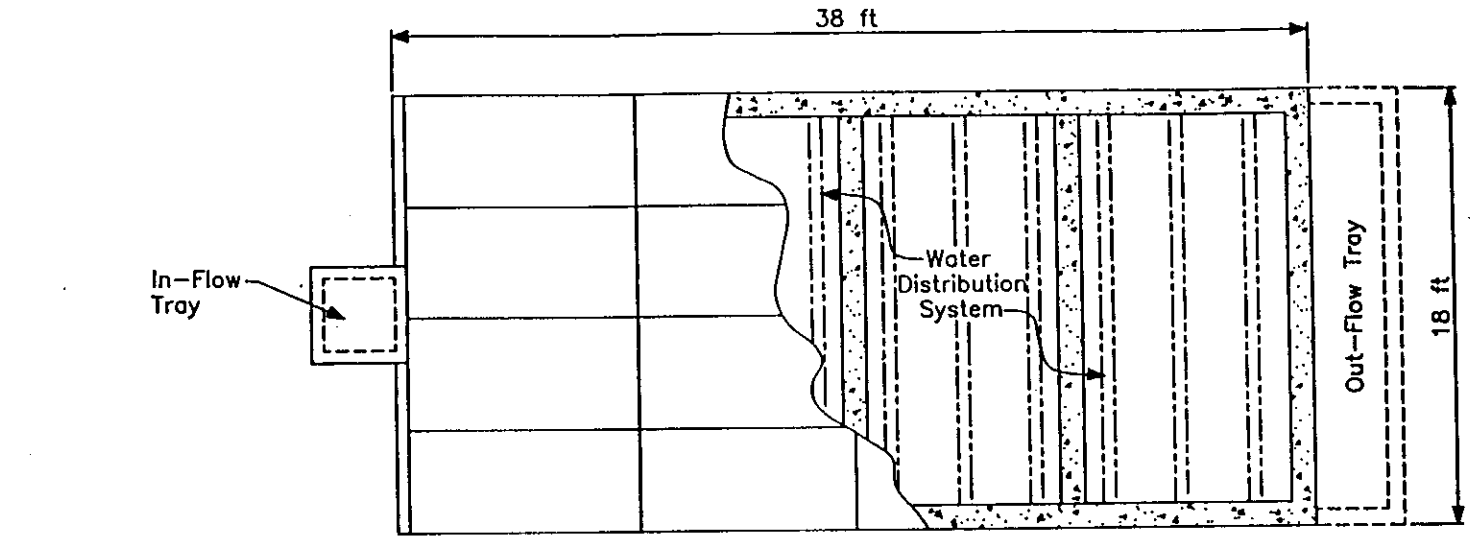


116-C-2 Pluto Crib System (Side View)

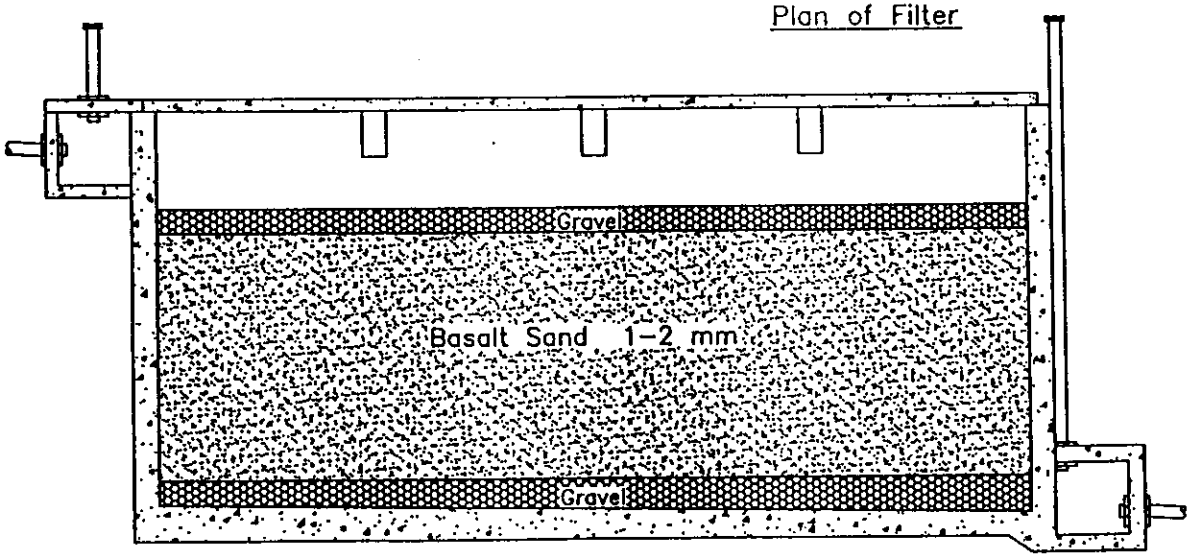


KOK\020193-D

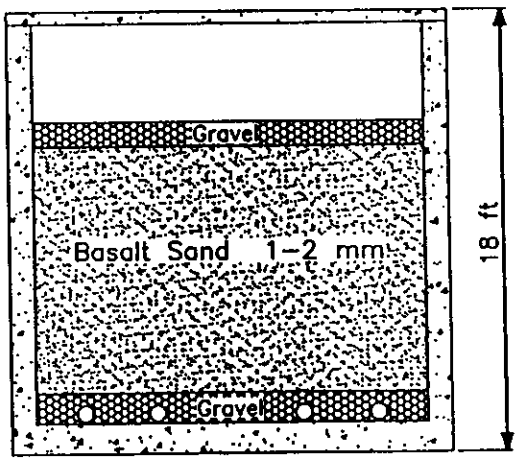
116-C-2C Sand Filter



Plan of Filter



Typical Longitudinal Section



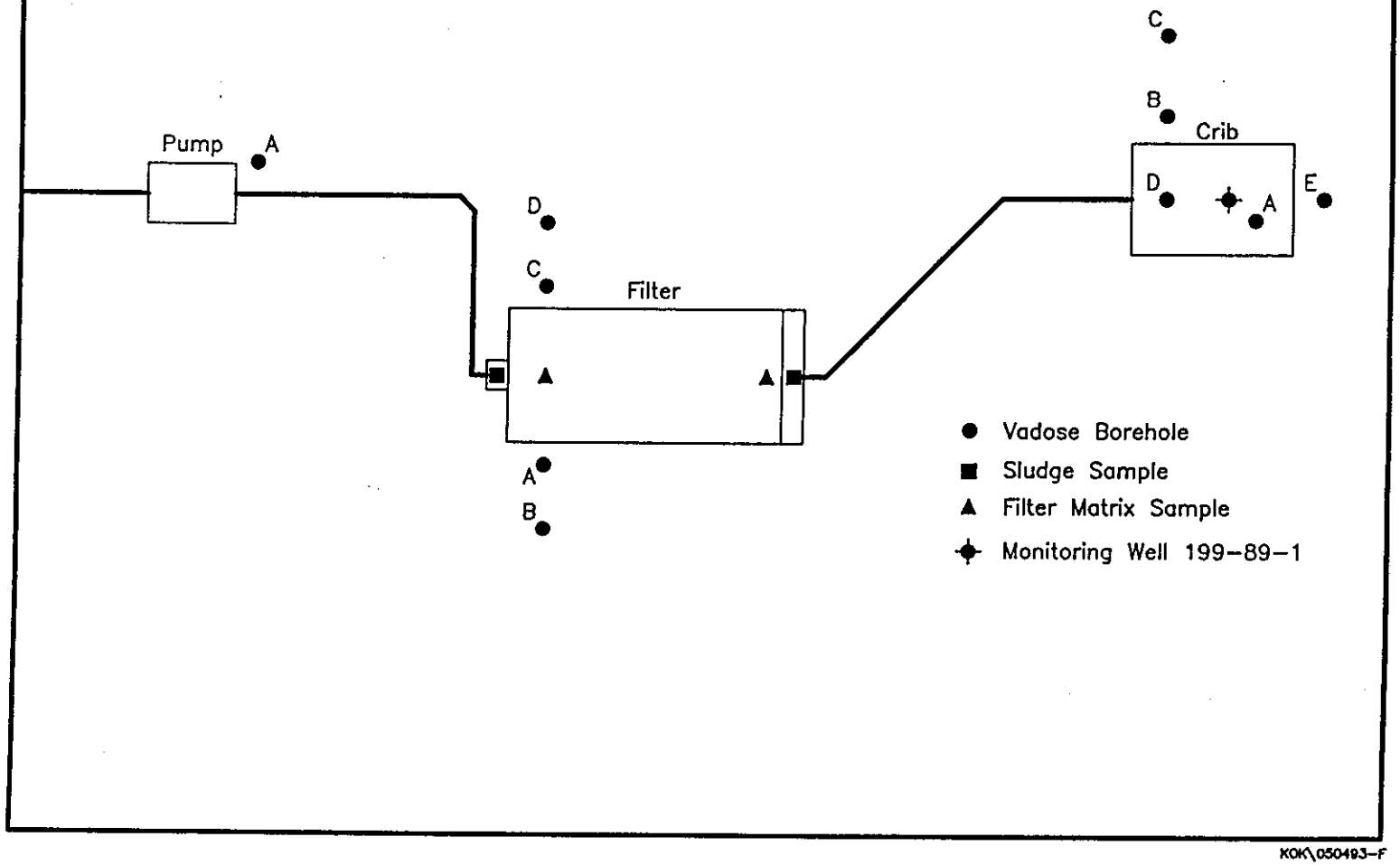
Typical Cross Section

K0K\041293-A

Dorian and Richards Sampling Data

- Sampling Locations
- Sampling Methods
- Results

Sampling Sites
Dorian and Richards
1976



Sampling Methods

- In-Flow and Out-Flow Trays
  - Access through stand-pipes
  - Sample sludge in bottom of trays
- Filter Bed
  - Remove concrete slab
  - Take a grab sample of filter matrix
- Boreholes
  - Cable tool drilling
  - Screen the sample interval
  - Send "hottest" material to lab

Dorian and Richards Data (1976)

LOCATION	DEPTH ft	P-11 C/M	CONCENTRATION pCi/g										
			Pu-238	Pu-239/240	Sr-90	H-3	Eu-152	Eu-154	Eu-155	Cs-134	Cs-137	Co-60	U.
In-Tray	grab	120 mR/hr	1600	1500	29,000	220					$1.4x10^5$	$7.1x10^6$	
In-Bed	grab	15 mR/hr					2000				$5.7x10^3$	$8.3x10^4$	
Out-Tray	grab	80 mR/hr									$4.9x10^3$	$1.2x10^5$	
Out-Bed	grab	80 mR/hr				520					$2.1x10^3$	$1.0x10^5$	
C	22.5	500		1.1	12		270	37	12	.43	160	180	
A	25	1000	.77	7.9	14	93	53	3.3		7.7	280	490	.13
A	30	750		.97	22		710	41	900	12	87	42	

Dorian and Richards Data
Estimated Decay to 1993

LOCATION	DEPTH ft	P-11 C/M	CONCENTRATION pCi/g										
			Pu-238	Pu-239/240	Sr-90	H-3	Eu-152	Eu-154	Eu-155	Cs-134	Cs-137	Co-60	U
In-Tray	grab	120 mR/hr	1445	1500	20,197	89					$1x10^5$	$8x10^5$	
In-Bed	grab	15 mR/hr					850				$4x10^3$	$9.3x10^3$	
Out-Tray	grab	80 mR/hr									$3.5x10^3$	$1.3x10^4$	
Out-Bed	grab	80 mR/hr				210					$1.5x10^3$	$1.1x10^4$	
C	22.5	500		1	8		114	9	1		115	20	
A	25	1000	.7	8	10	38	22	.8			201	55	.13
A	30	750		1	15		300	10	78		63	5	

Formulation of Conceptual Model

1. Sources of Contamination
2. Types of Contaminants
3. Affected Media
4. Known and Potential Routes of Migration
5. Known or Potential Human and Environmental Receptors
6. General Understanding of Structure/Process

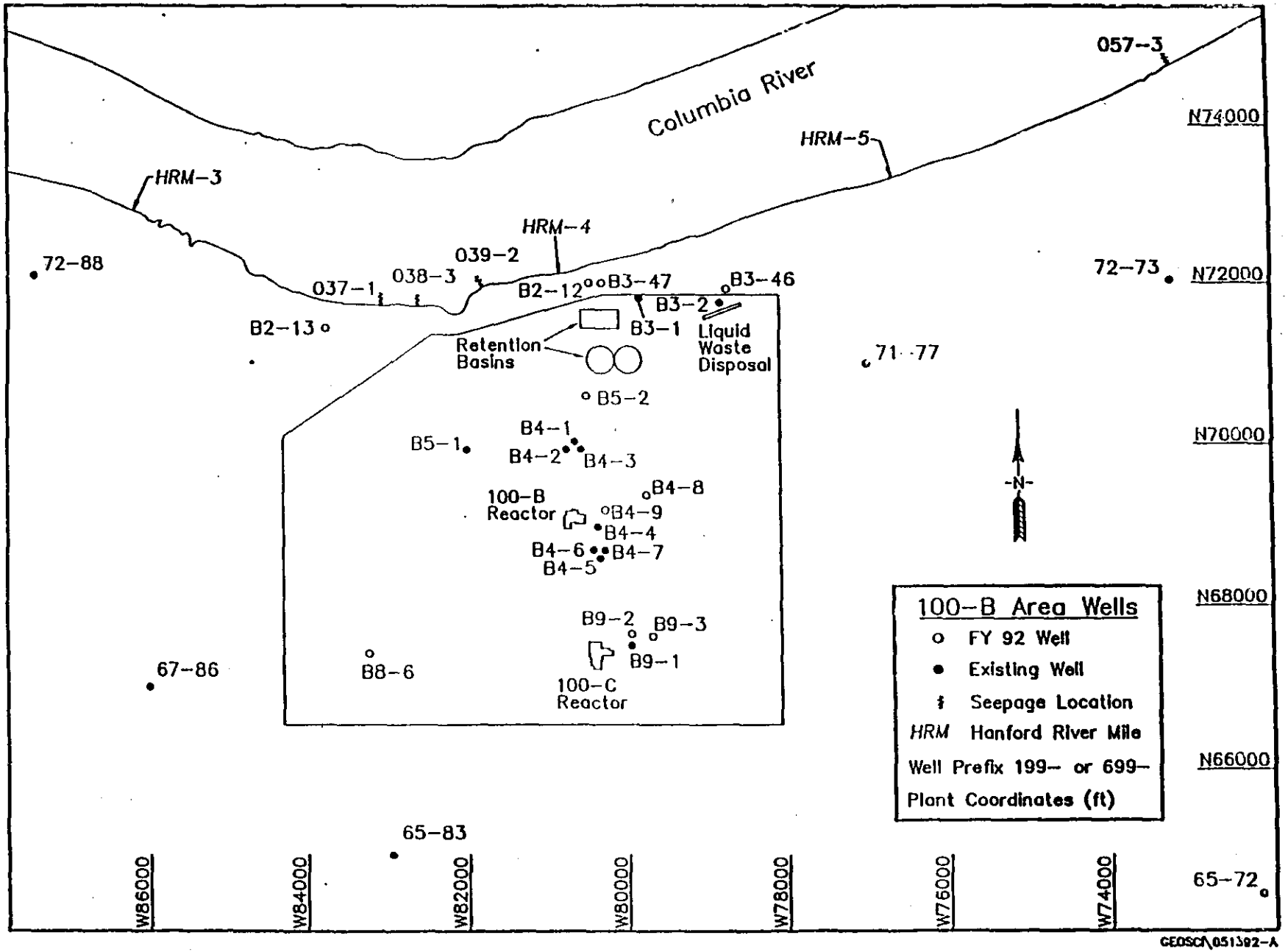
Perform Qualitative Risk Assessment

1. Data Sources:
   - Process knowledge, Dorian & Richards

2. Data Usability:
   - Non-CLP, but considered usable for the qualitative risk assessment with associated uncertainties

3. Risk Drivers
   - concentrations are comparable to those in the 116-C-5 retention basins in 100-BC-1 which are designated as high risk

4. Potential Impact to Groundwater
   - Dorian and Richard identified contamination to 30 ft
   - Depth to groundwater ~ 90 ft
   - Solid, confined structure will limit vertical migration
     - 116-B-1 vs sand filter
   - Neighboring monitoring wells have not identified any contaminants attributable to the pluto crib system



Summary

- Conceptual Model can be formulated
- Data is sufficient to support risk assessment
- Existing data identifies the site as highly contaminated with low-level, potentially low-level mixed waste at levels which warrant an IRM.
- Utilization of the observational approach will allow efficient, cost-effective remediation of the site.

Justification for not performing limited field sampling at the
116-C-2C Pluto Crib Sand Filter

Proposed: May 26, 1993

As a result of scoping meetings with the United States Department of Energy, Richland (DOE/RL), the U.S. Environmental Protection Agency (EPA), and the State of Washington Department of Ecology (Ecology), it was decided that there was insufficient data for the 116-C-2C sand filter (100-BC-2 operable unit) to support the formulation of the conceptual model and perform a qualitative risk assessment. For this reason, a vadose borehole would be drilled at the site to obtain additional information. Recently, as-built architectural plans of the site were discovered. Upon review of existing data and visiting the site, in conjunction with these drawings, it became apparent that an LFI at the site would not gain much valuable information beyond what already exists. The following discussion justifies not drilling a vadose borehole at the site.

1. Goal of the LFI: Define nature and vertical extent of contamination to support the decision of if or when an IRM is justified. This requires limited contaminant identification and knowledge of site location, dimensions and construction.

2. What is currently known:

- Location is defined by surface features. Concrete slabs that cover the filter are visible on the surface.
- Radiological constituents from Dorian and Richards identify major radiological contaminants at levels that will probably warrant an IRM. Location of Dorian and Richards sampling points is well documented.
- Vertical extent of contamination will be limited due to the sand filter having a solid (concrete) bottom.
- Excess liquids disposed to the filter were routed to the pluto crib.
- As-Built engineering drawings display the structure, dimensions and location of the sand filter.

3. Conclusions that can be drawn:

- Historical information identifies significant contamination that warrants remediation.
- Exact knowledge of site location exists.
- The structure of the filter allows the assumption that vertical migration will be limited.

4. Supporting Information:

- Dorian and Richards Data
- Process Knowledge
- As-Built Drawings
- Current identifiable surface features

Distribution
Unit Manager's Meeting: 100 Aggregate Area/100 Area Operable Units
May 26, 1993

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Diane Clark . . . . . DOE-RL, TSD/SSB (A5-55)
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Ward Staubitz, USGS . . . . . Support to EPA
Audree DeAngeles, PRC . . . . . Support to EPA

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